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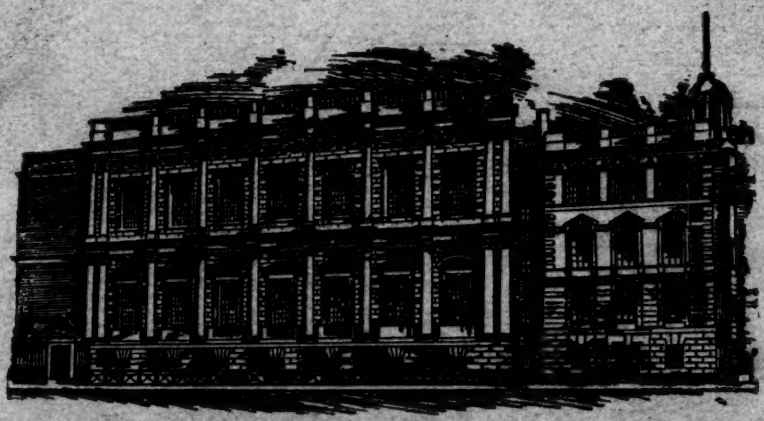

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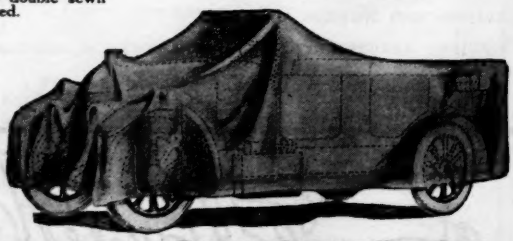

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Vice-Admiral H. W. Richmond, C.B., has been appointed a Member of the Council vice Rear-Admiral C. M. Staveley, C.B., C.M.G., who has proceeded on a tour of Foreign Service (Chapter IV. of the Bye-Laws).

Air-Commodore C. L. N. Newall, C.M.G., C.B.E., A.M., has been appointed by the Air Council as their official representative vice Air-Commodore E. R. Ludlow-Hewitt, C.M.G., D.S.O., M.C.

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Lieutenant J. A. S. Crum, R.A.
Lieutenant G. H. Gilbert, Royal Warwickshire Regiment.
Major E. G. Hume, I.A.
Lieutenant K. M. C. Mallam, The Buffs.
Lieutenant E. C. Hayes, Norfolk Regiment.
Lieutenant J. A. Giffard, R.N.
Captain R. D. Crew, I.A.
Captain C. J. Morris, I.A.
Captain R. B. Roper, I.A.
Brig.-General W. H. Bowes, C.B., C.M.G., late Royal Scots Fusiliers.
Commander J. F. Paget, R.N.
Sub-Lieutenant J. W. Hall, R.N.
Colonel B. C. Dent, C.B., C.M.G., D.S.O., late Leicestershire Regiment.
Lieutenant F. T. Boswell, R.N.
Lieutenant V. R. W. Crawford, M.C., R.A.
Lieutenant H. W. Daniel, M.C., Royal Fusiliers.
Lieutenant R. C. Cruddas, Duke of Cornwall's Light Infantry.
Lieut.-Colonel W. L. Marsh, late R.A.F.
Sub-Lieutenant M. H. Harding, R.N.
Air-Chief-Marshal Sir H. M. Trenchard, Bart., G.C.B., D.S.O.
Captain A. D. C. Le Sueur, late Royal Jersey Artillery.
Captain D. Q. H. Agnew, I.A.
Captain H. C. H. Illingworth, M.C., King's Royal Rifle Corps.
Captain T. M. Lunham, I.A.
Captain B. Ruffell, I.A.
Captain E. A. Staniland, 8th Hussars.
Captain E. D. T. Rowley, King's Own Scottish Borderers.
Captain H. Fisher, late R.A.
Air-Commodore C. L. N. Newall, C.M.G., C.B.E., A.M., R.A.F.
Lieutenant L. R. Hall, M.C., Royal Corps of Signals.
Lieutenant W. J. J. Allen, R.A.S.C.
Major C. A. Bird, D.S.O., R.E.
Captain A. B. Barltrop, M.C., I.A.
Captain E. R. M. Hall, I.A.
Captain R. Jee, M.C., I.A.
Lieutenant J. L. Stewart-Moore, late R.A.F.
Captain H. H. Hayden, late 6th Bn. Royal Welch Fusiliers (T.A.).
Lieutenant A. J. Wilson, M.C., Queen's Own Royal West Kent Regiment.
Captain R. de B. Devereux, Royal Scots.

Captain C. E. Morrison, M.C., Leicestershire Regiment.
Captain W. H. G. Beard, I.A.
Captain C. E. L. Harris, I.A.
Major W. A. Lovat-Fraser, I.A.
Lieutenant C. Pennack, Lincolnshire Regiment.
W. M. le C. Egerton, Esq., D.S.O., late Commander, R.N. Division.
Captain S. R. Bailey, D.S.O., R.N.
Lieutenant P. A. A. D'Oyly, Devonshire Regiment.
Paymaster-Captain W. E. H. Manisty, C.B., C.M.G., R.N.
Lieutenant C. G. Bailey, Royal Scots Fusiliers.
Lieutenant L. C. Manners-Smith, R.A.
Lieutenant A. C. French, Suffolk Regiment.
Lieutenant R. C. Muller, I.A.
Captain W. G. H. Gough, M.C., I.A.
Lieutenant J. D. Ainger, R.N.
Sub-Lieutenant T. S. Angus, R.N.R., retired.

III.—Gold Medal Essay (Naval), 1925.

The following essays have been received to 31st October:—

(1) "Sapere, Aude, Incipe."
(2) "Semper Vigilans."
(3) "True Defence is at the point of the Sword."
(4) "Necessitas non habet legem."
(5) "Je Pense."
(6) "Vigilat Validus."
(7) "Communications Dominate War."
(8) "Macte."
(9) "Ships, more Ships."
(10) "Sail on, nor fear to breast the Sea."

IV.—Gold Medal Essay, Air Force, 1926.

The Council have selected the following as the subject:

"But this much is certain, that he that commands the sea is at great liberty and may take as much and as little of the war as he will, whereas those that be strongest by land are many times nevertheless in great straits."—Bacon's Essays. Discuss the extent to which the above may be modified by the advent of air power.

V.—Admission to Lectures.

Members are reminded that they are able to introduce two visitors to each lecture. When a Member does not attend himself, it is necessary that such visitors should hand in his visiting card at the entrance.

VI.—Important Notice.

It is hoped that each Member will endeavour to obtain one new Member; a Banker's Order is enclosed in every JOURNAL with this object. If this could be done, there would be no further cause for anxiety with regard to the sufficiency of income.

VII.—Museum Purchase Fund.

This fund was opened with the object of purchasing suitable exhibits which from time to time are offered to the Museum, or are put up for sale at various auctions. The Council hope it will receive support from Members of the Institution who are interested in the Museum.

	£	s.	d.
Amount already acknowledged	68	10	0
N. A. H. Budd, Esq.	1	1	0
	69	11	0
Less expended to date	43	16	10
	£23	14	2

VIII.—The Museum.

The amount taken for admission to the Museum during the past quarter was:—

£157 14*s.* 6*d.* in August.
£141 1*s.* 0*d.* in September.
£89 19*s.* 9*d.* in October.

ADDITIONS.

(7894) Dress Saddlery and Horse Trappings of an Officer of the 1st Life Guards, formerly the property of Lieutenant U. H. R. Broughton. —Given by U. H. R. Broughton, Esq.

(7895–7898) Eight new Medals have been added to the Mint Collection, together with new Clasps appertaining to such Medals and other Medals previously in the collection. For list, *see* the Museum Catalogue. This collection is now complete to date.—Given by the Lords of the Treasury.

(7899) A Sword formerly the property of Qazi Hakim Ghulam Ali Kham Bahadur Osmani, Chief Physician to the Maharani Baiji Bai and H.H. the Maharaji Jai Ji Rao Sendia of Gwalior and a son of the Hereditary Ouzees of Pargana Amelhi, Lucknow, being a direct descendant of the third Caliph A.D. 644. Members of the Hakim family have been assisting the British since their first advent in India. The Sword, which in India is called Khanda, is of the famous Gujerat steel and bears the double circle Hall Mark of that place on its blade. It was used in many fights, and for the last time in the great Mutiny of 1857, when its owner struck down one Khandi, a Lieutenant of the rebel Rani of Jhansi. The Sword lost its scabbard in that action, but has been kept as an heirloom ever since.—Given by Qazi Syed Khadim Husain of Lucknow.

(7900) Two American Ships' Flags which were captured on Lake Champlain on 3rd June, 1813, by Colonel George Taylor, of the 100th Foot, who at the time was inspecting Field Officer of the Canadian Militia and commanding at Fort Ile-aux-Noix. Having equipped some gunboats and manned them with detachments of the Royal Artillery, 13th and 100th Regiments, he attacked two American gunboats, "Growler" and "Eagle," which, after an action of over three hours, surrendered, and these two flags were taken by him. The captured boats were subsequently entered in the British Navy as the "Chubb" and the "Tench."—Given by W. A. W. Dawn, Esq.

(7901) A lithographed Engraving published by Colnaghi, 1859, of Captain Sir William Peel, V.C., K.C.B., R.N. (1824–1858), who served in the Crimea and the Indian Mutiny.—Given by Captain N. F. J. Wilson, late R.I.M.

(7902) A lithographed Engraving, dated 1857, from the original picture painted by E. Hayes, R.H.A., depicting a scene of the first voyage of the "Shannon" (Captain Sir William Peel, V.C., K.C.B., R.N.), where a man overboard was picked up by the use of Clifford's boat-lowering gear, the ship being in full sail at the time.—Given by Colonel C. H. L. F. Wilson, R.A.

(7903) A description on silk of the Ensigns and Colours taken from the French and Bavarians at the battle of Blenheim (1704) by the Duke of Marlborough, executed by hand in Indian ink. It was formerly the property of Field-Marshal Sir Samuel Hulse (1774–1837), and is believed to be unique.—Given by the Hon. Lady Hulse.

(7904) A Wedgwood China Cup, which formed one of the set used by Napoleon I. at Longwood, the donor having known the Cup for 60 years. It was obtained by his Great Uncle (William Daniels),

who was serving as a soldier in the St. Helena garrison at the time of the death of the Emperor, and annexed it from Longwood previous to his Corps leaving that station.—Given by Mr. William Jarvis.

(7905 Naval Sword which was formerly the property of Lieut. Duncan A. Richmond, R.N., who died in 1895. It was found at Blantyre in Nyasaland by the British Resident.—Given by the Accountant-General of the Navy.

RECIPIENTS OF THE ROYAL UNITED SERVICE INSTITUTION GOLD MEDAL.

(With rank of Officers at the date of the Essay.)

1874. Captain H. W. L. Hime, R.A.
1875. Commander G. H. U. Noel, R.N.
1876. Lieutenant J. F. G. Ross of Bladensburg, Coldstream Guards.
1877. No Medal awarded.
1878. Major T. Fraser, R.E.
Captain E. Clayton, R.A.
1879. Captain The Hon. E. R. Fremantle, C.B., C.M.G., A.D.C., R.N.
1880. Captain J. K. Trotter, R.A.
1881. Captain L. Brine, R.N.
1882. No Medal awarded.
1883. Captain C. Johnstone, R.N.
1884. Captain G. T. Browne, Northamptonshire Regiment.
1885. Lieutenant F. C. D. Sturdee, R.N.
1886. Captain C. E. Callwell, R.A.
1887. No Medal awarded.
1888. Captain J. F. Daniell, R.M.L.I.
1889. Captain H. F. Cleveland, R.N.
1890. Captain G. E. Benson, R.A.
1891. Captain R. W. Craigie, R.N.
1892. Lieut.-Colonel J. Farquharson, C.B., R.E.
1893. Commander F. C. D. Sturdee, R.N.
1894. Major F. B. Elmslie, R.A.
1895. Commander J. Honner, R.N.
1896. Captain G. F. Ellison, Queen's Royal West Surrey Regiment.
1897. Commander G. A. Ballard, R.N.
1898. Captain W. B. Brown, R.E.
1899. Commander G. A. Ballard, R.N.
1900. No Medal awarded.
1901. Lieutenant L. H. Hordern, R.N.
1902. Major A. H. Terry, A.S.C.
1903. Lieutenant A. C. Dewar, R.N.
1904. Lieut.-Colonel C. E. D. Telfer-Smollett, 3rd Bn. South Staffordshire Regiment.
1905. Major W. C. Bridge, South Staffordshire Regiment, p.s.c.
1906. Lieutenant B. E. Domvile, R.N.
1907. Lieut.-Colonel A. F. Mockler-Ferryman, Reserve of Officers.
1908. Major A. B. N. Churchill, R.G.A.
1909. No Medal awarded.
1910. Captain P. W. Game, R.H.A.
1911. Captain H. T. Russell, late R.G.A.
1912. Commander K. G. B. Dewar, R.N.
1913. Major A. Lawson, 2nd Drags.
1914–15–16–17. No Medals awarded.
1918. Lieutenant W. S. R. King-Hall, R.N.
1919. Colonel J. F. C. Fuller, D.S.O., Oxford & Bucks L.I.
1920. No Medal awarded.
1921. Flight-Lieutenant C. J. Mackay, M.C., D.F.C., R.A.F.
1922. Major R. Chenevix - Trench, O.B.E., M.C., Royal Corps of Signals.
1923. Captain A. H. Norman, C.M.G., R.N.
1924 Major L. I. Cowper, O.B.E., King's Own Royal Regiment.

RECIPIENTS OF THE CHESNEY GOLD MEDAL.

(With rank of Officers at the time of the Award.)

1900. Captain A. T. Mahan, United States Navy.
1907. Major-General Sir J. F. Maurice, K.C.B., p.s.c.
1909. Hon. J. W. Fortescue, M.V.O.
1910. Sir J. K. Laughton, Knt., M.A.
1911. Professor C. W. C. Oman, M.A., F.S.A.
1913. Colonel Sir L. A. Hale.
1914. Sir Julian S. Corbett, LL.M., F.S.A.
1919. Major-General E. D. Swinton, C.B., D.S.O.
1921. Major-General Sir C. E. Callwell, K.C.B.
1924. Professor G. A. R. Callender, M.A., F.S.A.
1925. Captain Sir George Arthur, Bart., M.V.O.

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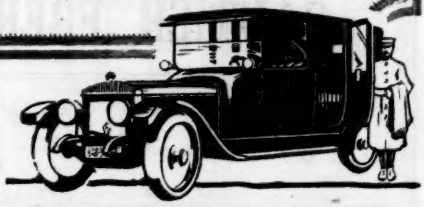

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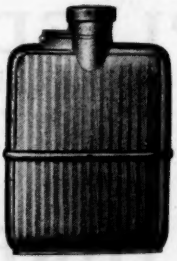

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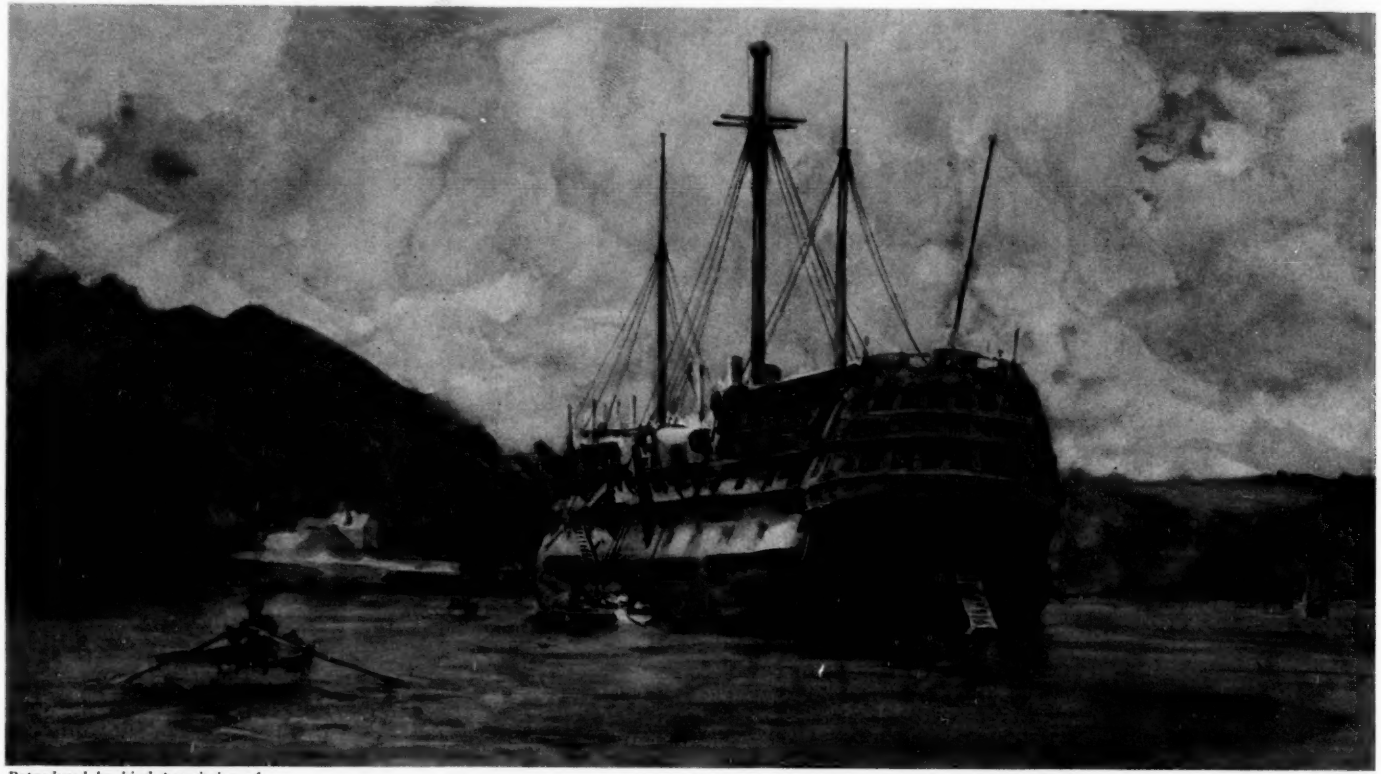

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THE LAST TRAFALGAR PRIZE
THE OLD *IMPLACABLE* (late *Duguay-Trouin*)
From the water-colour painting by H. S. Tuke, R.A.

The Old "Implacable."

A TRAFALGAR SHIP FOR BOYS.

AN APPEAL

BY

ADMIRAL OF THE FLEET EARL BEATTY, G.C.B., O.M., G.C.V.O., D.S.O., LL.D., D.C.L.

IT is now, or never, possible to preserve as a permanent national relic, and for the holiday sea-training of boys, a ship which, with H.M.S. "Victory," alone survives of the wooden ships-of-the-line of the Trafalgar era. The old 74-gun two-decker "Implacable" is the only vessel of her kind left in existence. She cannot remain afloat without extensive repairs, and is now in dry dock in H.M. Dockyard at Devonport, but so sound is her general condition that a sum not exceeding £25,000 (twenty-five thousand pounds) is needed to refit her.

The Admiralty cannot allocate monies voted for the maintenance of H.M. Fleet to the renovation of a ship no longer on the active list; but the Board would be willing to execute the necessary repairs in His Majesty's Dockyard if the public will defray their cost. Unless, however, the requisite funds are subscribed, the ship must be broken up in a very few weeks as the dock she occupies will soon be wanted, and what is both an unique national relic and the best possible vessel in which to teach boys something of their immortal heritage on the sea, will be lost for ever.

The "Implacable" was originally a French ship, launched, it is said, at Rochefort, about 1789, as the "Duguay-Trouin." She engaged H.M.S. "Victory" at Trafalgar; was subsequently captured by Sir Richard Strachan, after an action in which she lost her Captain, Claude Touffet, and 150 men killed and wounded; and became a ship of the Royal Navy. Renamed "Implacable," she performed long and glorious service, in her last commission carrying a golden cock at her main truck as the smartest ship in the Mediterranean Fleet.

Except for a few alterations, easily restored, the hull of the "Implacable," including her magnificent stern, remains as it was built: solid, stately, an incomparable monument of the great age of sailing-ship architecture.

One hundred and twenty years ago this ship set sail to fight at Trafalgar, and we celebrate each year the anniversary of the battle in memory of the heroic seamen of two great nations: the "Implacable" fought both under the Tricolour and the White Ensign; nor could

there be a nobler inspiration, alike in her majestic beauty and her splendid history, for the boys of England.

The ship, if saved, is to remain on loan at Falmouth to Mr. Wheatly Cobb, who has most generously maintained her at his own cost for the last 15 years, and will be used under his direction as a holiday training-vessel for Sea Scouts, Sea Cadets and other Boys' Organisations. These will, during their holiday on board, have good opportunity for acquiring the rudiments of seamanship under the most favourable conditions. Parties of about 250 can be taken at a time in this way during the suitable months of the year.

The fund to be raised will be administered by a Committee, composed of Mr. Wheatly Cobb, Sir Owen Seaman, the Mayor of Falmouth, with Captain E. Altham, C.B., R.N., as Secretary (Royal United Service Institution, Whitehall, S.W. 1). Sir Vincent Baddeley, K.C.B., will act as Treasurer, and subscriptions should be sent to him at the Midland Bank, Westminster Branch, Wesleyan Hall, S.W. 1.

I must repeat that, unless enough money is subscribed, the ship must very shortly be broken up.

Chief Sea Scout
and
President of the Nautical Research Society.

Admiralty, S.W. 1.
19th October, 1925.

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THE ANCESTRY OF NELSON'S SHIPS.

By VICE-ADMIRAL RONALD A. HOPWOOD, C.B.

On Wednesday 21st October, 1925, at 3 p.m.

VICE-ADMIRAL SIR H. H. BRUCE, K.C.B., M.V.O., Vice-Chairman of the Council in the Chair.

The CHAIRMAN: Ladies and Gentlemen, it is my pleasing duty to introduce to you the lecturer, Admiral Hopwood, who is well known in the Navy and elsewhere as a deep student of Naval history and Naval law. One of his works "The Laws of the Navy" is a Naval classic.

LECTURE.

TO most people the 21st October is so intimately associated with the name of Lord Nelson that they are rather apt to forget everybody and everything which, through the centuries, had been quietly contributing to his making.

Just as when a new and perfect flower is evolved, the marvel itself blinds us to the sun, rain, soil, and gardener, and the countless blooms that have blossomed and died to produce the perfect specimen, which, without their co-operation, could not have been produced at all.

True, there was but one Nelson, but the Nelson touch would have had no meaning had there not been something to touch, something laboriously built up through the centuries by the sea itself, the officers and men, greatest to least, their successes and failures, and the ships in which they served. And it is some thoughts about the ships particularly that I shall try and suggest to-day.

Few, except students of naval history, could name any ship except the "Victory" which fought at Trafalgar; fewer still, ships which fought in any other action, and yet, to seamen, the names of certain ships have a profound and practical meaning, and the influence of an ancient and honoured name upon the whole spirit of a modern ship bearing it is often remarkable.

Few landsmen really understand this, which, in a way, is rather curious, for our whole language is salted with expressions borrowed from the sea and ships. "Taken aback," "Plain sailing," "Above board," "Stranded," "Adrift," "Steering," "The Helm," "Piloting," and so on, are constantly used by people who know nothing of ships, but find in these terms their only medium for expressing their ideas and emotions.

To go further, in politics and the Press, especially in times of crisis, no picture is so often drawn for us as one of that curious craft, the "Ship of State." I say "curious" for it would seem from all accounts, that her only mission is to be strong, seaworthy, secure, well-provisioned, and to provide good accommodation and remunerative employment for all hands. She is represented as being in constant peril from storms, shoals, rocks, collisions or mutiny, and no wonder, for there is no word of her directive purpose or the service on which she sails, without which no ship's existence is justified. In other words, we hear nothing of her compass, chart or sailing orders, and I often think the statesman who could be inspired to point to these would find very little unrest among the ship's company.

And lastly, to go further still, even to the Churches, if you will look up the derivation of that part of the building where the congregation, the ship's company so to speak, sits, you will find, "'Nave,' from the Latin '*navis*,' a ship, so called partly from its oblong shape, and also because in ancient times the Church of Christ was often likened to a ship and used the ship as its symbol." In pre-Reformation days, the model of a ship used often to hang in the nave of a Church, a relic, perhaps, of the ancient custom of giving one as a votive offering for deliverance from peril at sea.

So the ships, it seems, are always trying to speak for and to us—let us try and hear what they have to say.

In Elizabethan times, Church and Ship history is closely interwoven, and the launching or hallowing ceremony was one of great importance, accompanied as far back as we can trace by a religious service, as it is to-day, and often performed by a Bishop. In 1418, for example, the Bishop of Bangor hallowed the "Grace à Dieu" at Southampton.

The ship in fact was, as we say, christened, which custom is peculiar to ships and human infants.

Whether this custom is responsible for or grew from what Chatterton calls "that wonderful personality of her own" which every ship acquires, which strikes and puzzles so many writers, and which is so familiar to seamen, I cannot say. The fact remains, all ships do acquire, and many seem to inherit, a remarkable personality of their own, and it is this inheritance and its influence which suggested the subject of my lecture.

Now this personality is, of course, something quite intangible and therefore far more real and imperishable than the hull which, for the moment, contains it. The "Victory," after her restoration, will contain comparatively little of her original hull and in time none; all we are doing is, with visible and perishable material, to enshrine something which is imperishable, call it the Spirit of the Ship or the Spirit of the Service, as we will.

Modern science practically admits that having resolved matter into its ultimate electrons and protons she is, so to say, hove to, and must needs fill her sails again and brave the unseen if she would find reality, and nothing, to my unscientific mind, is more suggestive of this than our habit of inscribing in a modern ship the achievements of her dead and gone predecessors of the same name, long since dissipated into electrons which, for all I know, may be wending their way back, in a new form of energy, from some remote planet, ready and eager to go to sea again; hurrying back, so great is their eagerness I understand, with the velocity of light, 184,000 miles a second, a good deal faster, we may suppose, than they ever went in a previous incarnation, even with stun'sls both sides and Nelson's eye on them. Though I am afraid you will agree with Nicholas, the naval historian, that verse "is not a satisfactory vehicle for nautical or any facts," I will presume to read a few verses in which I have tried to suggest the thought, if not the fact, of personality and ancestry.

THE FREAK.

His Majesty's ships they had timbers of teak
And a Jack at the bows and a Flag at the peak.
They would die for their King as he sat on his throne,
But their souls were immortal and when they had flown
They would rest for a while where you'd seek them in vain
Till the day they were summoned to service again.

Now a spectre came sailing, at sunset one day,
To the base where the cruisers and battleships lay;
As she beat into harbour her sails never shook
And the battleships strained at their cables to look,
Such a droll little spirit from counter to beak
That the cruisers cried out "Oh, my dear! What a freak!"

Now the ships of the squadron could never mistake
Any fashion they'd worn under Nelson or Drake
From a ship of the line to a galley or brig
But they'd never encountered the visitor's rig,
And she sang an old chantey which nobody knew,
" Oh, the sumer's icumen, sing lhude cuccu."

Then the great " Queen Elizabeth " hailed from the van,
And she twinkled as much as a battleship can,
" They are free to the sea who establish their right,
" Tell us what was your service and where did you fight? "
" Oh, I'll tell you my service," the stranger she cried,
" If you'll show me the way to the banks of the Clyde."

" I'd the luck to be launched by an English Princess,
" So I wear, in her honour, my christening dress,
" And I fought for my King as he sat on his throne
" In the greatest sea-battle that ever was known,
" And a flagon was drained as the hurricane burst
" To the health of His Majesty, Edward the First."

" In our van there went Tiptoft, a noble of note,
" Sir Robert, I mind me, we called him afloat,
" While the enemy's flag on that wonderful day
" Carried Charles, Count of Valois, from over the way,
" And we'd moored an old hulk in the Channel you see,
" For to mark us the place where the battle should be."

" Then we blew on our trumpets and beat on our gongs
" And we went at it lustily, hammer and tongs,
" With a ' Hi ' for our cry and long life to our Prince
" There was never a battle so terrible since,
" For the arrows and stones were a caution to see!
" Oh, we fought to some purpose in twelve ninety-three! "

Then the giants of Jutland, suspiciously grave,
They up with their anchors and escort they gave,
And they showed her the road to the banks of the Clyde,
But as soon as the squadrons got into their stride
You could hear, pretty clear, in the swirl of each screw,
" Oh, the sumer's icumen, sing lhude cuccu! "

And the sun rose in splendour at Greenock next day
On a marvellous cruiser, in natal array,
Re-incarnate her soul, as the sound of her name
With a prayer from the lips of her Godmother came,
But her heart beat as English in steel as in teak
For a Princess of England was launching—a Freak!!

And so we will turn to Nelson's ships at Trafalgar and investigate the ancestry of a few of them and see, if we can, something of what their hulls enshrined and the memories and inheritance that were theirs.

When the word " Ancestry " occurred to me, I took the list of Nelson's ships of the line at Trafalgar and divided them, tentatively,

into groups according to the anciently or peculiarity of their lineage, and then proceeded to investigate and tabulate each individual family history. By "family history" I mean the history of all the ships which had successively borne the same name since that name was first introduced. The results were so curious and suggestive that I left the groups just as they were, and when I mention a Ship's name I shall generally refer to the family of that name, unless a particular member is specified.

In our first group are those ships of Elizabethan or earlier ancestry, of whom there were seven, and whom we may, perhaps, call the old nobility, and whose first appearances under their Trafalgar names are as follow, with the dates, with two qualifications, when the families were founded, *i.e.*, when the name was first introduced:—

"Royal Sovereign"	1488
"Victory"	1560
"Dreadnought" and "Swiftsure" ...	1573
"Revenge"	1577
"Defence"	1588 } The Armada
"Defiance"	1588 } year.

In the next group are eleven, all Hanoverians except two, one being an early and one a late Stuart. They are as follows:—

"Prince"	1610
"Britannia"	1682
"Achilles"	1744
"Thunderer"	1760
"Ajax"	1767
"Agamemnon"	1781
"Polyphemus"	1782
"Bellerophon"	1786
"Colossus"	1787
"Orion"	1789
"Minotaur"	1793

All of good family, that is, Royal Ships, but proved as well by their behaviour at Trafalgar and that of their descendants down to modern days, and, though we find some rather new families among them in 1805, still I did not wish to have our groups too many or too small.

Next, we come to a group of five whom I will call the naturalised aliens, descendants of French families which had come to us in fair fight, and because of that, as they proved time and again according to the ancient honour and custom of the seas, loyally serving under their new Flag. They were:—

(3rd) "Temeraire"	1694
(3rd) "Mars"	1746
(2nd) "Belleisle"	1761
(1st) "Spartiate"	1798—Nile.
(1st) "Tonnant"	1798—Nile.

In the next group are three, the founders of whose families were hired merchantmen, good and stout fighters, as we should expect :—

"Neptune"	1621
"Africa"	1694
"Leviathan"	1778

And, lastly, the "Conqueror," whose first ancestor in 1746 was a fireship.

Evidently, from the antiquity and variety of their origins, the families must have acquired, through the centuries, a stock of memories, traditions and experiences which left them on 21st October awaiting only the supreme inspiration of the Nelson touch.

Especially is this true of the Elizabethan families. All seven, with one doubtful exception, had ancestors who took part in the Armada fight. All again, except the "Defence," were represented seventeen times between them in the various battles in the Dutch Wars in 1652–1674, and the families no doubt commented, at first, freely and forcibly, on the novel military methods imposed upon them by the famous Generals at sea as compared with the free and happy style of conflict of Elizabeth's time, in what perhaps they would, in their own language, regretfully refer to as the "last commission." The fighting, however, under the Generals, probably came to satisfy even the most sanguine of them. In this military connection, five of them must have chuckled reminiscently when we meet them again in 1692 in the bay of La Hogue, after Barfleur, when some of their boats, sent in to burn the French ships, grounded and were attacked by a regiment of French Cavalry.

The ships which took part in this picturesque amphibious encounter were a "Victory," "Royal Sovereign," "Dreadnought," "Swiftsure" and "Defiance."

A "Dreadnought" next appears, alone of her group, one of three ships which fought in Forrest's celebrated action on the 21st October, 1757, under command of Captain Suckling, Nelson's uncle, a red-letter day in Nelson's family, a day which Nelson was fond of predicting would be his lucky day, too, the 21st October.

Two years later, 1759, three of the group, a "Revenge," "Swiftsure" and "Defiance," followed Hawke into Quiberon Bay, and I think that they must have found this amazing battle well to their liking, and indeed quite like old times.

A "Royal Sovereign" and a "Defence" were at the glorious 1st of June in 1794; a "Royal Sovereign" flew Cornwallis's flag in his celebrated retreat in the following year, where her chivalry rescued one of the naturalised aliens, a "Mars," a debt repaid by the group with interest at Trafalgar

Our own "Victory" was flagship at St. Vincent; a "Swiftsure" and "Defence" were at the Nile, and a "Defence" and "Defiance" at Copenhagen.

Besides all this, the family chronicles record four total wrecks, one a "Victory" with all hands; two burned, one a "Royal Sovereign;"

and two, alas, taken into captivity, both "Swiftsures," one of whom was retaken at Trafalgar, so one of the family fought on each side.

So much for the old nobility; as a group, giving each family 1 point per action, the total of the seven comes to 40 points, counting only those famous actions I have mentioned.

By the same reckoning, the Hanoverian group of eleven which only had one family, the Stuart "Prince," old enough to have fought in the Dutch Wars, total 19; and in this are included Lord Rodney's action of the 12th April, 1782, where an "Ajax," "Agamemnon" and "Conqueror" fought, and Quebec, where a "Neptune" was Saunders' Flagship in 1759.

Curiously enough, just as Lord Nelson and Lord Duncan were not acquainted, so among the Trafalgar ship families are none connected in any way with Camperdown; but as Lord Nelson, after the Nile, wrote to say how much he had profited by Lord Duncan's example at Camperdown, we may be sure that he made up himself for the absence of any ship family experiences at the battle itself, where the attack was so similar to that at Trafalgar.

And now let us take one or two of the family histories. At once we are struck by the curious and ancient lineage of the Flagships, the "Victory" and "Royal Sovereign."

The "Victory" family under that name began in 1560, but there is evidence which convinces Mr. Oppenheim that with her appearance on the list there disappeared the "Great Christopher," and that the two were the same ship. If this be so, and the ancient and saintly "Christopher" family was ennobled, then the "Victory" ancestry goes back more than another 200 years and maybe much further, for we find "That beautiful large ship called the 'Christopher' which had cost the King much money" was captured by the French in 1338 and retaken by King Edward III. at Sluys in 1340, a battle commemorated by the well-known *Gold Noble* and an account of which King Edward wrote to the Black Prince, then aged ten, in the first naval dispatch which is in existence.

It begins:—

> "Very dear Son,
>
> "We are persuaded that you are desirous to know good news of us and how we have fared since our departure from England" —and goes on to describe the battle, and then—"All our ships, that is to say the 'Christopher' and the others which were lost at Middelburg are now retaken."
>
> "Given under our secret seal in our Ship the cog 'Thomas,' Wednesday the eve of St. Peter and St. Paul."

So the "Victory's" ancestry must have stretched back 250 years before the Armada fight; how much earlier I cannot say. The family of "Christopher," like all the saintly families, was very old, sometimes

called "Christopher," "Great Christopher," or "Christopher of the Tower," *i.e.*, a Royal Ship.

In those early days we have little to suggest tradition or spirit. It was, I think, a time of preparation for something which, I will suggest, was born in Elizabeth's time; what we do learn is rather of the material or technical order.

In King Edward's time, for example, the family first learned to carry guns, three of them, iron breechloaders, new-fangled weapons, which we may be sure met with the customary criticism and opposition from the mariners who had to fire them off, and whose lives were often thereby in some peril.

Much more welcome was another novelty, for we learn that a "Christopher" was of sufficient importance to carry three compass needles and one dial. All ships, of course, learned at their hallowing that they were destined and set apart solely for Service, and this new magic, they rejoiced to think, would carry that Service to the ends of the earth. It is likely that some earlier "Christopher," say, 100 years or so, actually saw the puzzled but exultant mariners "with an ugly and brownish stone, and after they have caused a needle to touch it and placed it in a rush, they put it in the water without anything more, and the rush keeps it on the surface. Then it turns its point to the Pole star with such certainty that no man will ever doubt of it, nor will it for anything go false." "And on this tiny index," says a modern American Professor, "the vast extension of modern commerce and imperialism rests."

So the "Christophers" learned to carry guns and compasses, and, as became Flagships, to set the course, the others following the three stern lanterns, or more if the King were on board and wished to display them.

The "Christophers," too, would certainly remember the first Admiral, Gervase Alard, commissioned by Edward I. in 1303, and probably two more, King Edward II.'s "beloved valets, John Sturmey and Peter Bard," commissioned in 1314 to "chastise and punish all transgressors" who had not attended, we suppose, to the exhortations of the first Chaplain of the Fleet who sailed with Gervase Alard in the Cinque Ports' Navy.

We are reminded too by King Edward's ship, the cog "Thomas," of another most important official, the master or swain of the cog, who has come down to us as the cog's-swain or coxswain and shared with the boatswain the privilege of carrying a whistle, later to become the badge of the Lord High Admiral, as we learn in Henry VIII.'s time, when, "At the turnpike on this side of Gravelines was the Lady Anne of Cleves received by Lord Lisle and the Earl of Southampton, great Admiral of England, apparelled in a coat of purple velvet. He wore a chain, at which did hang a whistle of gold, set with rich stones of great value."

It was only proper that this whistle should come to give the music of our own salute of piping the side, and probably the early "Victorys"

would remember seeing the Captains whose signal had been thrown out in bad weather, being hoisted on board the Flagship, the boatswain's call for hoisting being retained as a salute after its original purpose, with the introduction of signalling, was no longer necessary.

All this and much more, the " Christophers " were treasuring up to hand on to the " Victorys," and with the last of them would have passed the image of St. Christopher, hero of one of the most beautiful of old legends, which, in common with shrines to other saints, is said to have been the origin of the obeisance which we now call saluting the quarter-deck.

Of almost equally curious ancestry came the " Royal Sovereign," or " Sovereign " as the family name was in Henry VII.'s time. He had taken over a certain " Grâce Dieu, " built by Edward IV. in 1473, and she was " by the King's commandment " delivered to Sir Reginald Bray, Kt., Architect of the Royal Chapel at Westminster, " by him to be broken, spent, and employed for and upon the making of his ship called the Sovereign." So that her ancestry goes back to 1418 at least, when, as we saw, one of the family of " Grâce Dieus " was hallowed by the Bishop at Southampton.

So, 70 years later, in 1488, the " Sovereign " took up the family traditions and duties. With her was the " Regent," and the two were the most powerful ships of their day, the first with portholes.

The " Sovereign's " earliest memory was probably that day off Brest in 1512 when she and the " Regent " tackled the great carrack, " Marie la Cordelière," The " Sovereign " lost her hold, but the " Regent " and " Cordelière " grappled close, when, after hot work by the English archers and French crossbowmen, " the English entered the carrack, which seeing, a varlet gunner, being desperate, put fire in the gunpowder," and the " Sovereign " saw both ships blow up.

I think, at Trafalgar, the " Royal Sovereign " would remember how in the following year, 1513, the Commander-in-Chief, Lord Edward Howard, in a gallant attack on a French galley, had been forced overboard and drowned, and was last seen throwing away his chain and whistle so that no enemy should be able to wear the badge of the Lord High Admiral.

And so we come to Queen Elizabeth's time, when we pick up the other five of our group, the " Dreadnought," " Swiftsure," " Revenge," " Defence " and " Defiance," and, with the first three at least, we see the new fashion of sailing ship whose likeness to her descendants at Trafalgar was so much greater than to her immediate predecessors.

And with this change, gradually and imperceptibly came another, growing, as the " Revenge " would affirm, from the seed planted by Drake himself and whose fruit Nelson was to bring to perfection in his band of brothers.

Let us glance at the origins of these five :—

The " Dreadnought " and " Swiftsure " or " Swift-Pursuer " families were founded and named by Elizabeth as an immediate result

of the massacre of St. Bartholomew's Day in 1572, a few months after that Whitsunday, the 24th May, our Empire Day, on which Drake sailed on the famous trip to Nombre de Dios, which resulted in his first sight of the Pacific from the Panama tree-top in 1573, in which year both Ships were launched.

The "Revenge" of immortal fame, and Drake's flagship against the Armada came next in 1577. The first of the "Defiances" was a pinnace in the Armada Fleet in 1588; the next in 1591 was Lord Thomas Howard's flagship "at Flores in the Azores where Sir Richard Grenville lay" in the "Revenge," and Drake died on board her in 1596.

The first "Defence" or "Royal Defence" was provided for the Armada Fleet by the citizens of London.

All seven of our group, if we include a rather doubtful "Sovereign," were in the Armada Fleet, and three were intimately associated with Drake.

The "Dreadnought" went with him to the singeing of King Philip's beard, 1587, the year before the Armada came, and so would remember how the resulting death of the Marquis of Santa Cruz, the Commander-in-Chief, led to the Duke of Medina Sidonia, whose nobility of rank greatly exceeded his ability as a seaman, being placed in chief command of the Armada in 1588, and led, in consequence, to the appointment on our side of Lord Howard of equal nobility and superior seamanship, over Drake's head.

The "Revenge" flew Drake's flag during the Armada fight, and, as I said, he died on board the "Defiance" in 1596.

So the Drake tradition was, we may suppose, paramount in these three families, and of these the "Revenge" knew most at first hand, for she had seen him emerge triumphant from his own searching test.

Her story really begins when the "Golden Hind" brought Drake home from his voyage round the world in 1580, and since so much stress was laid by the ships upon their hallowing, it became a matter of great interest to them to know why, having left England three years before as the "Pelican," she had come home under another name. It seems the change had been brought about as a result of what had happened at Port St. Julian just North of Magellan's Straits on the way out. "In this Port," the "Golden Hind" told them, "Our General began to enquire diligently into the actions of Master Thomas Doughty and found them not to be such as he looked for, but tending rather to contention or mutiny or some other disorder whereby without redress the success of the voyage might greatly have been hazarded." Then she went on to tell of Doughty's trial and the evidence which convinced the jury, formed according to the laws of England, and ending "The place of execution being ready, he embraced our General and took leave of the Company, and with prayers for the Queen's Majesty and realm in quiet sort laid his head to the block where he ended his life."

And then she told how the class warfare, which Doughty had

started, grew worse instead of better, till at last Drake made his famous appeal to the "Gentlemen and Mariners" to "haul on the same rope and show themselves all of a company," and she would quote from Francis Pretty's diary which he had written on her own deck:—"Our General made divers speeches to the whole company, persuading us to love unity, obedience and regard of our voyage, and for better confirmation thereof willed every man the next Sunday following to prepare themselves to receive the Communion as Christian brethren and friends ought to do, which was done in very reverent sort, and so with good contentment every man went about his business." And that business, as we know, under the inspiration of the earliest breath of the Spirit of the Service, was to cut the first furrow of the Empire.

A week later, off the entrance to the Magellan Straits, to commemorate the birth of the new spirit in her:—

> "Our General caused his fleet, in homage to our Sovereign Lady the Queen's Majesty, to strike their topsails upon the bunt as a token of his willing and glad mind, and changed the name of the Ship which himself went in from the 'Pelican' to be called the, 'Golden Hind,' which ceremonies being ended, with a sermon and prayers of thanksgiving they entered the Narrow Strait."

That was the "Golden Hind's" part of the story. She put it into a sort of chantey for the gentlemen and mariners, questioning them to make sure that they understood Drake's new doctrine, and they would answer—in chantey fashion, as they hauled on the same rope. She called it "The New World" and it ran something like this:—

THE NEW WORLD.

Oh, how did you learn where the New World lay?
The New World—the New World!
Oh, how did you learn where the New World lay
In the Gold and Silver Sea?
Why, our Skipper he climbed a tall topped tree
And he saw it fair and he saw it free,
Then he prayed for leave to sail that sea,
So we sailed with Drake to the New World.

And how was the road that you had to tread
To the New World—the New World?
Oh, how was the road that you had to tread
To the Gold and Silver Sea?
Oh, the road was long and mortal bad
Till we thought that the seas were raving mad,
We'd have liked to have kept to the world we had!
But the Skipper he led to the New World.

And how did you travel the road along
To the New World—the New World?
Oh, how did you travel the road along
To the Gold and Silver Sea?
We were each for himself when we first set sail,
But as sure as we lived to tell the tale,
Except for Drake and a north-east gale
We'd ha' never clapped eyes on the New World.

. . . . . .

The next verses were always sung to the roll of their General's drum :—

And what did they teach you to help you find
The New World—the New World?
Oh, what did they teach you to help you find
The Gold and Silver Sea?
What you never can learn till you sell your farm:
"If the Ship counts first you can take no harm,
"And a man mustn't think of his 'own yard arm'
"When he's winning his way to the New World."

And what did you find when at last you came
To the New World—the New World?
Oh, what did you find when at last you came
To the Gold and Silver Sea?
Oh, we found that the Skipper had told us true
And we thanked the Lord that our Ship came through,
Though the world was the same—why our hearts were new!
So it looked like a beautiful New World.

Then the "Revenge" herself takes up the story, eight years later. She was flying Drake's flag at Plymouth in the Spring of 1588, and the Armada was getting ready to sail, when word came that Lord Howard, who was in the narrow seas flying the Royal Standard in the "Ark Royal," was to come round to Plymouth and take supreme command of the Grand Fleet of the day with Drake only as his Vice-Admiral. The "greatest mariner who sails the seas" was to haul on the same rope with, but after, the great gentleman, and so the "Revenge," "Dreadnought," "Swiftsure," "Victory" with John Hawkins on board, the "Defence" and "Defiance," and perhaps a "Sovereign," waited to see what would happen, and, telling the story in after years, the "Revenge" would say :—

> "Whereupon at my Lord's coming, with intent to show himself in answerable degree, Sir Francis Drake having been up to that time Admiral on that station sallied from Port to meet him with his thirty ships in equal ranks, three ships deep, making honourable show of his masterly and diligent handling with pinnaces and small craft thrown forward as though to reconnoitre the ships that were approaching, as is their office. The salute was given and returned mutually with friendly plaudits on the one side

and the other, the ordnance being accompanied by the trumpets and drums and by the joyful shouting of the soldiers of all the companies."

Then she would describe how the " Ark " was hove to, and how the Vice-Admiral's flag which had flown beside the Royal Standard was hauled down and sent across to the " Revenge," leading up we may be sure impressively to the climax. " Thereupon, Sir Francis Drake, likewise striking his former Standard from its place, gave orders for the new one to be received, and using in soldierlike discretion every demonstration of due respect, according to the relation between them, showed himself always of one thought and mind in harmony with his superior Admiral." And then the ships heaved a sigh of relief for they knew that they had the Armada beat.

A few months later, the news came into Plymouth Sound that the Armada was in sight, and the " Revenge " family always affirm that it was more than chance that the messenger was a small fishing vessel named after the Admiral's own " Golden Hind."

Evidently Lord Howard was impressed. " I must not omit to let you know," he wrote to Sir Francis Walsingham, " how lovingly and kindly Sir Francis Drake beareth himself, and also how dutifully to Her Majesty's Service and unto me being in the place I am in." " I had the happiness," echoed Lord Nelson more than 200 years later, " to command a band of brothers."

Of all the memories the Elizabethans brought to Trafalgar, none, I think, would have appealed more to Lord Nelson than three pictures in the " Revenge's " family collection. First, her capture of the first Armada prize and the surrender of Don Pedro de Valdez. Next, her leading the fleet into the final and decisive action off Gravelines; and, last of all, the picture off the Azores of the death of the most famous ancestor that any ship has had.

We read of the spirit and traditions of the Service, and I think it is to our Elizabethan group we must look for witnesses of their birth. As the ships took on a new form, so I believe they began to enshrine a new spirit, born it may be of the influence of some undefinable but definite reality whose presence was suggested by ships already growing famous and their names, and which was gradually producing, often, as we read, from what seemed the most hopeless material, a breed of mariners which Mahan speaks of in modern times as " a strange race apart."

In Queen Anne's time, for example, there was an Act which begins:—

" Forasmuch as divers dissolute and idle persons, rogues,
" vagabonds and sturdy beggars do wander up and down and
" endanger the peace and tranquillity of the Realm, be it enacted
" that they be taken up, sent, conducted and conveyed into Her
" Majesty's Service at Sea."

But notwithstanding, all the time we see signs, straws in the wind, of a mysterious influence at work, in incidents often humorous, sometimes pathetic and always significant, the result of which Admiral Mahan so well describes in another place. Speaking of Lord Nelson in the "Agamemnon," he says that "vessel and crew became, under him, one living organism." Indeed, the story of the "Agamemnon" in those years is a striking instance of the personality of the great seaman and the personality of his ship reacting upon one another.

We next meet our Elizbethan group in the Dutch Wars 1652–1674, notable among them being the "Sovereign of the Seas," the first three-decker which Trinity House, founded in the days of her ancestors, had pronounced to be "beyond the wit of man" to produce. Later she was cut down to a two-decker as the "Sovereign," and finally became the "Royal Sovereign" after the Restoration.

The new generation were to learn new ways under their military commanders, by whom they were methodically drilled into Ships of the Line, a process and formation which might well have stretched the patience of their Elizabethan ancestors to the breaking point. Later, of course, they and their descendants, under the influence of such heredity, repeatedly did break the line with hilarity and success, but, in the meanwhile, there is reason to suppose that they retaliated in their own quiet fashion by exercising, unceasingly and undismayed, their mysterious influence, for the good of the Service, upon those very great and gallant gentlemen, the Generals at sea. I often think that there is evidence of this in the increasingly elaborate decoration of the ships of this period. When we pick up the "Prince" for the first time, the oldest of our next group, decoration, often carried it would seem to almost extravagant lengths, but always suggestive, and culminating in that symbol of personality, a beautiful figure-head, the last emblem of the living ship of which a mechanical age has robbed us.

Of the straws in the wind of which I spoke, one comes at this time and from a "Victory," 140 years before Trafalgar, and tells of an Admiral who died on her deck after trying to conceal his wound so as not to discourage his men. Be very sure the "Victory" remembers this and that he was a namesake of her ancestor the "Christopher," for it was Sir Christopher Mings whose flag she flew in the four days' fight of 1666. He was the son of a shoemaker, and to his funeral, in Sir William Coventry's coach, went Samuel Pepys, who, on his return, records for us: "'The most romantic incident that ever I heard in my life, which was this. About a dozen able lusty proper men come to the coach side with tears in their eyes and one of them that spoke for the rest began and said to Sir William Coventry—"We are here a dozen of us that have long known and loved and served our dead Commander, Sir Christopher Mings, and have done our last office of laying him in the ground. We would be glad we had any other to offer; all we have is our lives, if you will please get His Royal Highness to give us a fireship, here are a dozen of us out of which choose you one to be Commander, the rest will serve him whoever he is,

and if possible do that which shall show our memory of our dead Commander.' Sir William Coventry was much moved, as well as I, who could hardly keep from weeping."

Samuel Pepys knew much of ships and much of men, but even he had not fathomed the depths of that extraordinary combination of the two which is found in that most expressive of all words —Shipmates.

It is at this time, too, that the Spirit of the Service found actual expression in our own Prayer, a petition used daily in the Navy ever since King Charles II.'s time, which asks, in effect, that we may be " preserved from the dangers of the sea, so that we may be of service to somebody else."

Quiberon Bay, 1759, was the last action in which the Trafalgar Elizabethans appear alone, a " Swiftsure," a " Revenge " and a " Defiance," all of a new generation, and no doubt they would have recalled, as they followed the Admiral on that " wild November day when Hawke came sweeping from the West," a letter written from the " Revenge " 200 years earlier,—" We have the army of Spain before us and mind, by the grace of God, to wrestle a pull with him."

And so we begin to pick up our next group, the Stuart " Britannia " family, founded after the Dutch Wars, and the rest of the Hanoverians. And when next we meet the names of our Trafalgar ships on the glorious first of June, 1794, they are no longer ancestors but the Trafalgar ships themselves.

Three new families, the " Thunderer," " Bellerophon " and " Orion," all Hanoverians, and the " Leviathan " of mercantile ancestry, joined the Elizabethan families of " Royal Sovereign " and " Defence," six in all, under Lord Howe.

It would now seem that the leaven of ancestry had got well under way, but, though at St. Vincent, the Nile, and Copenhagen we pick up more and more of our Hanoverians, always we find one and generally two of the old nobility with them, as storm sails in case of bad weather.

It was on the first of June that we find another straw, pointing to the strengthening bond between ship and mariner. One of the most severe duels in history took place between the " Brunswick " and the " Vengeur," which were alongside one another. At its height, a shot from the " Vengeur " removed the cocked hat from the ducal brows of His Grace of Brunswick, who adorned the bow of the " Brunswick " as her figurehead. In the heat of the conflict, a deputation of seamen waited upon Captain Harvey with a request that he would lend them a cocked hat, for it was not to be thought of that their Duke should go uncovered in the face of the enemy. Captain Harvey assented, his coxswain supplied the hat, which was at once nailed on and there remained throughout the action. That, of course, is hardly a matter for serious history, but it seems likely that there would be little history to write if the " strange race apart " did not, now and again, at a suitable opportunity, submit such conclusive evidence that they were indeed part of a truly living organism.

At St. Vincent, we find the "Victory," "Britannia," "Orion" and "Colossus."

At the Nile, the "Swiftsure," "Defence," "Bellerophon," "Orion," "Minotaur."

And at Copenhagen, the "Defence," "Defiance," "Agamemnon," and "Polyphemus."

And so, every timber seasoned with memories and traditions, acquired and inherited, and the mysterious influence which these exercised upon their officers and men, Nelson's ships sailed into Trafalgar, and there I had originally proposed to leave them.

One day, however, I thought I would see, simply out of curiosity and from the point of view of ancestry, how the families were grouped and went into action at Trafalgar and what their casualties were, not with a view of producing scientific or historical proof of anything whatsoever, but to see if by any chance there was something which might serve to help us the better to remember the ships. Here are the results, and in considering them, let us not keep the sheets of our imagination too flat aft :—

Leading the Lines came the two of most ancient lineage, the "Victory" and "Royal Sovereign." Now, the latter had been Cornwallis's flagship in his famous retreat, and she had with great chivalry and at great risk rescued one of our alien families, the "Mars." As Cornwallis modestly and briefly says in his report: "In the evening they made show of a more serious attack upon the 'Mars' and obliged me to bear up for her support." It is, therefore, very pleasantly suggestive of the ancient law of the chivalry of the seas, to find that at Trafalgar the two Flagships were closely followed into action by, and received the most practical support from, no less than four members of the alien families out of five, the "Victory" by the "Temeraire" and the "Royal Sovereign" by the "Belleisle," the "Mars" herself, and the "Tonnant," while the 5th, the "Spartiate," came at the end of Nelson's line, and at the close of the action hove to with the "Minotaur" across Dumanoir's bows ready to cover her own Admiral.

With Nelson, a line in himself, leading in the "Victory," it is not surprising to find that the old nobility were grouped elsewhere, for astern of the "Temeraire" came two of the three of mercantile ancestry, in close touch with the Admiral, the "Neptune," who later towed the "Victory" to Gibraltar, and the "Leviathan," while the third, the "Africa," smallest ship present, lacking perhaps ancestral experience with a fleet, got lost the night before and comes into the picture on Nelson's beam in the morning, gallantly sailing down the enemy's line and happily engaging it as she came. Astern of the "Leviathan," Nelson's line was completed by the "Conqueror," of incendiary ancestry, so that the three whose ancestors were least accustomed to Fleet work were nearest to Nelson, and, astern of them came all Hanoverians and the "Spartiate" already mentioned.

In Collingwood's line, astern of the "Tonnant," came three more

Hanoverians, the "Bellerophon," "Colossus," and "Achilles," and astern of them, as if to give the driving power to the spearhead of the "Royal Sovereign," came the rest of the old nobility, occupying five out of the seven places. The Elizabethan twins, "Dreadnought" and "Swiftsure," and the "Defiance" all together, the "Revenge" next but one ahead leading them, and the "Defence" next but one astern. The line ended with the Stuart "Prince," who, when the enemy was signalled, had been supplying water to the only other Stuart, the "Britannia," better known as "Old Ironsides," the veteran of the fleet. This, and a split fore topsail, made the "Prince" late in getting into action.

So we find them at the supreme moment of the family histories, an ideal democracy, the families grouped ancestrally, but only so as the better to give of their best, each according to her endowments, hauling on the same rope for the good and in the spirit of the Service.

And now in terms of casualties let us see what each group gave.

We have seen the significant positions of the families of alien origin supporting their flagships, but, besides this, imagine the nature of the conflict between members of such families, old Norman families may be, taken in fair fight, and so seamanly and honourably doing their utmost, and their former compatriots seamanly and honourably bent upon their recapture; evidently we have one of those problems which deep might set to deep, and whose solution would be fraught with deplorable consequences to both sides.

So it turned out, for we find that our alien group averaged 89 killed and wounded per ship, the highest average of all the groups.

Next, as perhaps you will guess, came the old nobility with 76, and then the Hanoverians with 51, which include the "Colossus" and "Bellerophon" with 360 between them,—and here note again the "Colossus" retook our own "Swiftsure," and of the "Bellerophon," the heaviest sufferer at the Nile, it was said, such was her influence "That no one could be a coward on board the 'Bellerophon'" and the men had chalked "Death or Glory" on their guns when they went into Trafalgar.

Next came those of mercantile ancestry with 44, due, of course, not to any lack of gallantry but simply to lack of ancestral experience in finding the warmest corners.

And lastly, the "Conqueror" of Fire Ship family, whose ancestor, carrying no crew, would herself have had none. Her descendant had only 12 at Trafalgar, being kept by fate, we may suppose, fairly intact so that she might provide the boat, Captain Atcherley of the Royal Marines and his escort, to receive Admiral Villeneuve's surrender and convey him and his staff on board the "Mars."

And there we will leave the Ships, and before asking you to bear with yet a few concluding verses, I will sum up their ancestry in words

which Sir Wm. Monson, in his epistle to Captains, Masters, Pilots and Mariners quotes from Cicero :—

" He dies not who leaves a good fame."

THE OAKS OF ENGLAND.

They've felled the Oaks of England to serve Her Grace's need!
Famed of the Royal Forests, the best the realm could breed,
Bowed to the axe like courtiers, rejoicing as they fell,
For she was Queen of England, and England loved her well.
Oh loyal Oaks of England, what if all else depart?
Dies not the faith of England ye drew from England's heart.
Deep calls to deep, whose voices echo by rock and shoal.
Give heed, for in their secrets a ship shall find her soul.

They've launched the Oaks of England—was ever such a craft?
The Golden Dragon forward, the great poop-lanterns aft.
Deep was the roar of cheering, swelling from wharf and quay,
But deeper still the message came rolling in from sea:
" Be welcome, Oaks of England, and give you good success,
" As one, where ye were many, steadfast in selflessness,
" So that ye pray by labour, ceaseless with might and main,
" Seeking not praise nor profit, we give you life again!"

They've proved the Oaks of England, black night or windy morn,
Aching in tropic stillness or fighting off the Horn—
Till in a voice of thunder the winds of Heaven spoke:
" Salute, ye gales, the pilgrim, with heart of English Oak!
" Greeting! Oh Oaks of England; right well your fathers knew
" Storms be the strength of England: we give new strength to you."
So, through the years that followed they faltered not nor failed,
But, joyous, into battle the Oaks of England sailed.

They've stripped the Oaks of England—watch the old ship go by,
Crowned by the golden sunset, in patient dignity;
So on the hearths she's guarded, that they who love may learn,
In radiant rainbow splendour the scarred old timbers burn.
God bless the Oaks of England! Staunch to the end they blaze,
Singing of hard-fought battles, praising the ancient days.
With humble heart and thankful search deep the crimson glow,
So shall ye win the secrets the Oaks of England know.

(*There was no discussion.*)

The CHAIRMAN proposed a cordial vote of thanks to the Lecturer, which was carried with acclamation.

THE OLD "IMPLACABLE."

The CHAIRMAN: This being Trafalgar Day, I have been commissioned by the Council to bring before your notice what you will have all seen from the newspapers yesterday, namely that an Appeal is being made to the nation to save the " Implacable." The " Implacable," as perhaps some of you know, was a French prize after Trafalgar. She was a 74 two-decker, and fought in the battle of Trafalgar in the French line. She escaped from the main action, but was

captured on her way back to her home port and brought into Devonport, being there converted into a British 74 and renamed "Implacable." She continued in service for forty years, under two Kings and Queen Victoria, and went through all the small wars in the Mediterranean—the siege of Acre, the Syrian coast, etc. She was paid off in 1842 at Devonport and relegated to harbour service.

She became a training ship for boys, but in 1908 was paid out of commission and was going to be sold, but was saved for the nation by Mr. Wheatly Cobb, of Falmouth, who took her to Falmouth with the object of using her for training purposes.

Something must now be done to save her. She is in dock at Devonport at the present moment, and Lord Beatty has appealed to the nation, through the Press, to save the ship. If she is saved (and no doubt she will be, for the amount required is very small—£25,000; there may even be someone present who is prepared to pay the whole sum!) she will go back to Falmouth; Mr. Wheatly Cobb will still look after her, and she will be preserved as a holiday training ship to keep the maritime spirit of the youth of this nation alive.

Vice-Admiral HOPWOOD, in reply, said: I am most grateful for the way in which you have received my efforts. I would like to mention that about half the slides I have shown were from pictures painted and lent to me by Colonel Harold Wyllie, who made the beautiful models of the "Victory," "Sovereign of the Seas" and "Golden Hind." I should like to say how very grateful I am for such valuable help.

The proceedings then terminated.

MODEL SHIPS.

The following models of ships from the Museum of the Institution were shown at this lecture:—

1. A SHIP OF WAR—1486–1520:—a rough model of the period when guns were first introduced. (Catalogue No. 441.)
2. DUTCH SHIP OF WAR—1660–1720:—although not to scale the model is an exceptional specimen of artistic carving and is correctly rigged. The original probably carried 74 to 104 guns. (Catalogue No. 437.)
3. BRITISH 64-GUN SHIP—*circa* 1720:—transferred from Windsor Castle in 1902 by command of His Majesty King Edward VII. (Catalogue No. 6765.)
4. FRENCH 74-GUN SHIP "LE HÉROS"—1770:—this ship, in company with the 64-gun "Artésien," captured our 50-gun "Hannibal" in 1783, but was destroyed by Captain Sir W. Sidney Smith at the evacuation of Toulon in 1793. (Catalogue No. 476.)

THE BRITISH LEGION: ITS ORIGIN, OBJECTS AND SOME ATTAINMENTS.

By COLONEL E. C. HEATH, D.S.O., General Secretary, British Legion.

WHILE the Great War of 1914 to 1918 was still in its infancy, before ever anti-gas devices became necessary or tanks made their appearance; long before the assaults on Messines or Vimy had been conceived, or the Hindenburg line dreamed of; even before many had thought of offering their services, men, fresh from the holocaust of war, had come together and had begun to form ex-Service associations of various kinds.

The first batches of wounded and disabled men returning to the Homeland from the Front consisted of Regulars and Reservists only: to these were soon added Special Reservists, Territorials, Kitchener men and others. Rapidly the stream of wounded grew and as rapidly did it sweep into its course many who had but recently been torn from civil life. In the various hospitals of the country these men found themselves treated with the greatest attention, and untold kindnesses were showered upon them with lavish generosity.

But on discharge from hospital varying fortunes awaited them. Some returned to their units at the Front; others were discharged as unfit for further service; and of these, all who could, sought to re-establish themselves in civil life.

By some employers these men were welcomed back in generous fashion and restored to their old positions which had been kept open for them. By others—and unfortunately these were many—they were met with no such welcome, and soon there were to be seen vast numbers of brave men, who, having faced undaunted the trials and dangers of war, now found themselves broken alike in fortune and in spirit.

Again, many thousands of men—breadwinners for the greater part—whose businesses or finances had already been shaken to their foundations by the outbreak of war—had found rest in those spots "for ever England."

Thus it was that returned men, widows, children and other dependents were in many cases faced with ruin and starvation; homes were sold up and the drift in the maelstrom of misery and unemployment began. Many early realised the truth of the statement, attributed to a well-known Japanese General, that the memory of a nation for its war heroes is limited to but six months' duration, and they saw that in organisation alone lay the hope of securing a fulfilment of the promises that had been made.

It was but natural that in these early days many associations should be brought into being, and it as naturally followed that, being many, they were unable to achieve all they set out to do. These associations were independent of each other; they lacked cohesion; they were without unity of purpose; there was no concentration of effort between them. In spite of difficulties, the record of achievement of these individual organisations in their great struggle for the ex-Service cause is one of which they may well be proud.

But the war showed that complete success was only attainable through unity of purpose and of action; hence it was that Field-Marshal Earl Haig and those associated with him, the leaders of the then existing national ex-Service organisations, set to work in 1920 to bring together these several bodies and to form out of them one coherent whole.

Their efforts resulted in the creation of the British Legion which, on the 1st of July, 1921, took its place as the one national organisation of ex-Service men. The position of the Legion has since been further stabilised and strengthened by the granting to it, in April last, of a Royal Charter. By the gracious bestowal of this Charter the Legion has now definitely taken its place in the life of the Nation for all time.

Principles and Policy.

The principles and policy for which the Legion stands may thus be summarised :—

(*a*) The Legion shall be democratic, non-sectarian, and not affiliated to or connected, directly or indirectly, with any political party or political organisation.

(*b*) The Legion shall be created to inaugurate and maintain, in a strong, stimulating, united, and democratic comradeship, all those who have served in His Majesty's Navy, Army, Air Force or any Auxiliary Forces, so that neither their efforts nor their interests shall be forgotten, that their welfare and that of the dependents of the fallen may be safeguarded, and that just and equitable treatment shall be secured to them in respect of the difficulties caused in their lives as a result of their services.

(*c*) The Legion shall exist to perpetuate in the civil life of the Empire and the World the principles for which the Nation stood in the Great War, to inculcate a sense of loyalty to the Crown, Community, State and Nation, to promote unity amongst all classes, to make right the master of might, to secure peace and goodwill on earth, to safeguard and transmit to posterity the principles of justice, freedom and democracy and to consecrate and sanctify our comradeship by our devotion to mutual service and helpfulness.

Among the objects set forth in the Charter as those for which the Legion is established and incorporated are the following :—

(I) To bring about the unity of all who have served in Our Navy, Army, Air Force or any of Our Auxiliary Forces, and to establish branches of the Legion.

(II) To perpetuate the memory of those who died in the service of their country.

(III) To educate public opinion to the view that the maintenance of the disabled and the welfare of the ex-Service men, women and dependents is a national duty.

(IV) To endeavour to obtain public recognition for the principle that ex-Service men and women, in accordance with their qualifications, are entitled to preferential treatment in all matters relating to the finding or provision of employment.

(V) To establish or support by financial or other means, including subscription for shares, suitable undertakings for the training and/or employment or otherwise for the benefit of ex-Service men and women whether such undertakings shall be situate in Our Kingdom of Great Britain and Northern Ireland or in Our Dominions or Possessions Overseas or elsewhere and to do all that may be necessary or requisite to enable ex-Service men or their dependents to take advantage of the opportunities offered by such undertakings.

(VI) To assist ex-Service men to secure not less than the recognised standard rates of wages in accordance with their ability.

(VII) To assist ex-Service men and ex-Service women and the widows, children and dependents of those who have served in matters relating to pensions, allowances, grants and war gratuities.

(VIII) To promote the welfare of the women and children left by those who have fallen in Our service in war, and to arrange for and assist them to visit the graves of relatives killed in war.

(IX) To promote representation of the needs of ex-Service men, widows and children and dependents to or in Parliament and to or on public bodies whose functions are defined by Act of Parliament or Order in Council.

(X) To assist serving men in connection with their return to civil life and promote the interests of their dependents while they are serving except in so far as concerns their discipline, privileges and emoluments in money or kind under the Regulations in force for the time being of Our Naval, Military or Air Forces respectively.

(XI) To promote and support schemes for the education of ex-Service men and their children.

Organisation and Membership.

The basis of the Legion's organisation is the Branch, to one of which every member must belong. These Branches are to be found in the towns

and villages throughout England, Wales and Ireland (North and South), and, for purposes of administration and control, they are grouped together in certain geographical Areas. Each Area is governed by a democratically elected Council, appointed yearly at the Annual Conference of Branch delegates of the Area. These Areas are, in some instances, sub-divided into their component Counties, having County Committees to which certain powers and duties may be delegated by the Area Councils.

Branches are also being established in all countries overseas outside the Empire ; among the more recent to be set up being those at Buenos Aires, Constantinople, Havre, and Ypres.

Each year at Whitsuntide takes place the National Conference of delegates from all Branches of the Legion. This constitutes the supreme governing body of the whole. This Conference annually elects the National Executive Council, to which is entrusted the work and administration for the ensuing year.

Membership of the Legion is op n to :—

(i) Ex-Service men and women who have served at least seven days with the colours in Our Navy, Army, Air Force or any of Our Auxiliary Forces, except conscientious objectors. Those who for the period between the 4th, August, 1914 and the 31st August, 1921, shall have served seven days embodied service with Our Navy, Army, Air Force or any of Our Auxiliary Forces, and those who prior to the 4th August, 1914, or subsequent to the 31st August, 1921, shall have received seven days' pay from the funds of Our Navy, Army, Air Force or any of Our Auxiliary Forces, shall be deemed to have served seven days with the colours.

(ii) Men and women of the Mercantile Marine who have served afloat during hostilities outside examination areas.

(iii) Men and women of the Red Cross Organisation of the Empire (*i.e.*, St. John's Ambulance Association, the British Red Cross Society, and the St. Andrew's Ambulance Association), provided they have served with the Forces of the Crown.

(iv) Any British or naturalised British subject who has served seven days in an Allied Force during the Great War.

The Charter also provides for ordinary members being admitted to life membership of the Legion.

Further, all men and women who accept and support the policy, aims and objects of the Legion may be admitted to honorary membership through their local Branches.

There is also a Women's Section, to which may be admitted all women eligible for ordinary membership as well as widows and dependents of ex-Service men.

It will be seen from the above that the Legion does not restrict its membership to those who served in the Great War—it has, indeed, within its ranks veterans of earlier wars and others who were too old for service in 1914. It admits also those who are leaving the Navy, Army and Air Force at the present day.

It includes in its numbers Admirals and Field-Marshals and men of every other rank and grade throughout the whole hierarchy of Naval and Military Command, and among its members are to be found representatives of every branch of all the fighting Services.

The Legion's Position.

Among ex-Service organisations throughout the world the position of the Legion is unique. By its membership of the British Empire Services League, it maintains contact with the ex-Service movements of the several Dominions ; while, by its association with the Fédération Interalliée des Anciens Combattants, it keeps alive the comradeship which existed between men of the Allied Forces in the War, and stimulates interest in the various inter-Allied aspects of ex-Service problems.

The Legion is the only organisation which is a member both of the British Empire Services League and of the F.I.D.A.C., and it thus becomes the connecting link by which are joined together all ex-Service men of the Empire and of the Allies.

As a unit in the national life, the Legion occupies a position scarcely less important, its voice being constantly heard with effect in connection with the foremost matters of the moment, such as unemployment, housing, pensions, and the like.

Its position in the Nation's life is admirably exemplified by the wonderful response given to the appeal for funds to relieve distress among unemployed ex-Service men and their dependents.

Employment and Pensions.

The organisation of the Legion, as outlined above, lends itself admirably to the creation of machinery for finding employment for its members, while its intimate connection with the ex-Service associations of the Dominions places it in a favourable position for prior consideration in matters concerning migration. By means of the Branches, the closest watch is kept on all local changes in the industrial situation, and immediate advantage is taken of all offers of vacancies.

Through the activities of the Branch Committees, the National Employment Committee and the Staff at Headquarters, work for many thousands has been found, while valuable concessions have been obtained from the Government and from local Authorities greatly aiding in the quest for work. Among the more important of such concessions is that which rules that on all State-aided schemes of employment, 75 per cent. of the men engaged shall be ex-Service men. The outstanding importance of this part of the Legion's activities to the national well-being will be fully appreciated when it is remembered that there are still 750,000 ex-Service men awaiting work.

By far the most difficult problem with regard to employment is that concerning the re-absorption into civil life of the war's disabled. The

Legion has always held that special legislation is necessary for dealing with this vital matter, and in May, 1924, introduced into the House of Commons a Bill for the Compulsory Employment of Disabled Men. The Bill, which received the support of all parties, passed its second reading without a division; but such are the vagaries of Parliamentary procedure, that it got no further at that time. The Legion, however, is losing no opportunity of advancing this matter, as it is of the considered opinion that on a compulsory basis alone will be found an equitable solution to the problem.

The casualties sustained by the British Forces during the Great War reached the appalling total of 3,190,235. Of these

944,303 died of wounds (and from other causes),
2,100 were discharged blinded,
6,000 (approx.) were discharged with tuberculosis (nearly 20,000 have since died),
6,166 were discharged certified insane,
4,063 were discharged with epilepsy.

In addition to the above there are to-day 8,800 men still in hospital receiving treatment from the Ministry of Pensions.

From this it will be evident that one of the most important objects of the Legion must be to protect the interests of disabled men, widows and orphans.

Successive Governments have done much. Over £500,000,000 has been spent on pensions and treatment, and the charge this year to the Treasury will be little short of sixty millions sterling.

The Legion has throughout paid very special attention to the question of pensions. It has worked in close co-operation with the Pensions Ministry and many of the concessions and improvements in the early pensions schemes have been due entirely to its unremitting activity and vigilance. Legion representatives serve on every Committee in the country connected with pensions, and over 2,500 of its members are working voluntarily for the Pensions Minister at the present time.

An important part of the Legion's pensions work is in connection with the House of Lords Independent Appeal Tribunals. Pensioners who feel that they have a grievance against the Ministry of Pensions' decisions on Entitlement and Assessment are allowed to appeal to these Tribunals within a certain limit of time, and machinery has been set up whereby Legion Advocates are available to represent applicants in their appeals before these Courts. Up to date over 40,000 cases have been represented and in 62 per cent. of these it has been possible to persuade the Courts to reverse the previous decision of the Ministry of Pensions.

It may safely be stated that at least 500,000 pensions cases are dealt with by the Legion's machinery every year, and that in consequence there are in this country more than 2,000,000 persons, disabled men, widows and others, who are better off in pocket or happier in mind on account of the work done by the Legion in pensions alone than they would have been had there been no such organisation to take up their cases.

The Legion recently organised a National Public Petition regarding two matters that have long caused considerable hardship to disabled men and widows, namely, the operation of the Seven Years' Time Limit, and the Final Awards Regulations. Space does not permit of detailed explanation of these two points: suffice it to say that in less than six short weeks nearly a million citizens signed the petition, and as a result of this, and of the representations now being made, it is hoped to obtain some modification of the Regulations.

Another important section of the Legion's work concerns the after-care of war orphans. At the present time there are in Great Britain and Ireland 301,000 fatherless children, of whom 18,000 have lost both parents. The Government's obligation in respect of the majority of them ceases when they reach the age of 16, and the Legion is at the moment formulating a definite policy in connection with their after-care. With the assistance of the 2,600 Legion Branches, and the close co-operation of other organisations that are interested in this work, it is hoped to safeguard the future of these children.

Tuberculosis Village Settlement.

The Legion has long been of the opinion that for the treatment and care of tuberculosis it is necessary to make arrangements whereby the patient may receive treatment at any time and may live and work under congenial conditions. With this end in view a Legion Village Settlement and Training Colony has been established at Preston Hall, near Aylesford, Kent. This settlement consists of a large mansion with its park, grounds and cottages, covering in all an area of 150 acres. It is divided into three sections:—

(1) A Sanatorium, where patients are kept under medical observation for a probationary period;
(2) A Training Colony where, when fit to work, suitable trades, such as carpentry, gardening, printing, and so forth, are taught to the patients; and
(3) A Village Settlement, where the men live with their wives and families in comfortable cottages while working at the occupation in which they have been trained.

Another of the Legion's practical activities is the British Legion Poppy Factory, where 180 badly disabled men are employed all the year round making "Flanders" poppies and wreaths in anticipation of the great demands of Remembrance Day.

The average disability of all employees in this factory is between 60 per cent. and 70 per cent., which means that the men employed are probably more severely disabled than those in any other factory employing only disabled men. Some of these men have lost both legs, some an arm and leg, and the Legion feels that by employing them in this special way it is setting a great example in showing what can be done

by men who are said to be unable to compete in the ordinary labour market.

Throughout the year these men have been busily engaged in making fifteen million poppies and eleven hundred wreaths in preparation for Armistice Day.

Relief.

The Relief Department of the Legion consists of two main Branches: (1) Officers, (2) other ranks.

(1) *Officers.*—On the formation of the Legion, the former Officers' Association became its Officers' Benevolent Department. The function of this Department is to deal with all matters connected with relief and employment of ex-officers, and to advise and assist them in any of the numerous post-war difficulties that may confront them or their families in any part of the world. In 1924 its Claims and Pensions Bureau successfully dealt with 1,200 cases; its Legal and Financial Advice Bureau with 403 cases; while its Families Branch, which gives direct assistance of various kinds, from paying doctors' bills to gifts of boots and clothing, spent nearly £1,400 in the same period and nearly £20,000 on the education of children. During 1924 the Employment Branch spent £22,000 in relief of distress, and over £6,000 in business loans, and it also placed in employment over 400 disabled ex-officers. A further £43,000 was expended by the Disablement Branch in its efforts to give the disabled ex-officer a fresh start or to enable him to maintain his home. Since the inception of the Department, a total of £360,000 has been advanced to ex-officers, free of interest, to help them to make a new start in life, and of this amount already £150,000 has been repaid.

In April last the Ministry of Labour handed over to the Legion the Officers' Employment Bureau at Clement's Inn, which is now administered by the Department.

The work of this Bureau is to find employment for fit ex-officers. Since the Legion took it over it has succeeded within six months in placing 630 men and arrangements are now in hand to increase its activities so as to include the Provinces as well as the London area.

(2) *Other ranks.*—It is a sad fact that the further away we get from the war, the more acute becomes distress among the ex-Service community. The reason for this is the natural exhaustion of unemployment benefit, local funds, etc.

Since its inception the Relief Department of the Legion has disbursed £405,017 through the local Branch Relief Committees for the relief of distress amongst ex-Service men and their dependents to a total of more than a million persons.

The work of investigation falls most heavily on the local Branch Committees, and there is no greater example to be found of the Legion's earnestness of purpose than the efforts of these devoted honorary workers who spend night after night investigating the various cases which present themselves—cases often revealing a state of tragedy and

dire want. Steps have recently been taken to organise Relief Committees throughout Southern Ireland, to look after the interests of our Irish comrades and their dependents.

The Relief Department has had the handling of a grant of £160,000 received from the National (Prince of Wales's) Relief Fund. As this grant was made specifically for employment it has been utilised in making small loans to start ex-Service men in business. In this way some 4,000 men have been set up in work. Since the inauguration of this scheme the sum of £86,000 has been thus loaned and of this already £30,000 has been repaid.

Other schemes of a more extensive nature have been financed from this same fund, the chief amongst them being the Ship-breaking Schemes at Plymouth and elsewhere. By the operation of these schemes, considerable numbers of ex-Service men have been employed on the work of breaking up ships, which, had it not been for the Legion's action, would have found their way to the breakers' yards in Germany and Holland.

The Legion has also assisted certain other Societies and Institutions which have for their objects the employment or care of disabled men. One Society dealing with tubercular cases employing 300 ex-Service men has been enabled by the Legion's aid to meet a total wage bill amounting to £45,000.

Homeless ex-Service Men.

Everywhere are to be found numbers of ex-Service men who are without relatives. Having lost their occupation and exhausted their unemployment benefit, they gradually drift to London, with its innumerable cheap lodging-houses. These men fall lower and lower until they lose their self-confidence and respect and become almost unemployable.

The Relief Department at Headquarters has established machinery for dealing with these cases, and already over 9,000 have been assisted. A large number of these men have been found employment and some have migrated to the Dominions.

Appeals.

It will be evident from this short summary of the Legion's work that vast sums of money are required to carry out its purpose. With the exception of £10,000 paid over by the Government with the transfer of the Officers' Employment Bureau, the bulk of its funds are raised by direct appeals to the public. The main source of income for this beneficent work is that derived from the sale of Poppies on Remembrance Day (November 11th) organised by Field-Marshal Earl Haig's British Legion Appeal.

From small beginnings in 1921 the success of this appeal has advanced by leaps and bounds. In 1924 the total amount raised on Poppy Day exceeded the magnificent figure of £350,000. Various other appeals are

made throughout the year, the more notable among them being the "Scrap of Paper" of the 4th August.

There exists also the Great War Remembrance League, which has for its function the provision of a guaranteed annual income for the Legion. Members of the general public have been invited to join this League and to set aside annually a definite sum, small or large as best suits their circumstances, for the furtherance of the Legion's great work A large number of private donations also annually help to swell the funds necessary for the disbursement of relief.

It is interesting to note, taking all the work of the Appeals Department into consideration, that the administrative expenses connected with the raising of money have never exceeded five per cent.

Benevolent Committee.

The British Legion Benevolent Committee, of which Field-Marshal Earl Haig is himself the Chairman, has for its chief function the co-ordination of all funds existing for the relief of distress among the ex-Service community and for the assistance of their families. It aims also at preventing the overlapping of these various funds. This Committee is responsible to the National Executive Council for the preparation of appeals for Benevolent Funds and for the allocation, distribution and management of Funds to be expended on Benevolent purposes.

Through it and other Committees of the Legion the closest touch is maintained with the United Services Fund, on whose Council of Management of twelve the Legion elects nine members; the Royal Naval Benevolent Trust; the British Red Cross Society; the National Association for the Employment of Regular Soldiers, Sailors and Airmen, and the various funds maintained by Old Comrades' Associations.

Women's Section.

It is perhaps not always realised that there are approximately three-quarters of a million widows and dependents of deceased ex-Service men drawing war pensions, and another million wives and children of disabled men. There are also many thousands of widows with young children who are not entitled to war pensions, but whose husbands served their country in her hour of need. Many of these have been in terribly straitened circumstances. Constant efforts have been made to improve their lot, and it is satisfactory to know that their case will in great measure be met by the Widows' and Orphans' Pensions Bill, which comes into operation with the New Year. The value therefore of a Women's Section is self-evident.

A large number of Branches of the Section—constituted on lines similar to those of the Legion—are already in existence, and it is hoped eventually that for every Legion Branch there will be a corresponding Branch of the Women's Section.

Readers who can recall the days that followed the Crimean war will remember how little was done by the Nation for the disabled and the dependents of those days, and, even in more recent times, the sufferings of the South African and other wars were speedily forgotten and the sufferers neglected with a callous indifference.

It is hoped that this brief account of the Legion and its work may serve to bring home to some, who may not before have fully realised it, how essential it is, in days when wars are waged by whole "Nations in Arms," that there should exist in the interest of all who suffer from these cataclysms a strong, stable and efficient Society to protect those interests.

To-day the British Legion, backed by the devoted and unceasing interest of the Prince of Wales, its Patron, and Field-Marshal Earl Haig, its President, is endeavouring faithfully to fulfill this great post-war mission.

ARMY MANŒUVRES, 1925.

By CAPTAIN B. H. LIDDELL HART.

NO sooner had the bugles sounded the "Cease Fire" than on every hand the question was being asked, "Were the manœuvres worth while?" At their close there was revealed a very general feeling of depression, a belief that events had conspired to make the manœuvres a burlesque instead of the serious and illuminating test which it had been hoped they might prove. From the time when each of the two forces performed a solemnly executed *pas seul*—with half a dozen miles separating them—until the moment when the blunder of a bugle brought part of the operations to a premature close, many farcical incidents, it is agreed, had occurred. Yet reflection fortifies the opinion that so harsh and sweeping a judgment is neither fair nor correct. Indeed, it is possible to go further and to say that the ultimate fruits of the manœuvres may well be more bountiful than if all had gone "according to plan." For one thing, things rarely happen thus in war, and it is well that the inevitable "friction" of war should be emphasized and appreciated on the mimic battlefields of peace. For another, it is a well-proven truth that we learn more from our mistakes than from our successes. The General Staff deserve a tribute for courage, first in risking the troubles, then in facing the difficulties, recognised to be inevitable in any large-scale trial of our present military machine, still in the throes of transition. If any felt dejection, they might well recall Goethe's gem of wisdom: "Some folk never make any mistakes, because they never try to do anything that is worth doing." The manœuvres were worth doing, even more for their negative than for their positive lessons.

Their originators knew well how fantastic were some of the popular claims that had already been put forward—that manœuvres would solve all the problems of the future and decide between the rival schools of military thought—but, even so, they might well and reasonably hope, firstly, to give the commanders and staffs a real opportunity of handling the present pattern forces in large-scale operations; secondly, that the manœuvres might shed some light on the first fruits of mechanicalization and on the influence of the air on troop movements. It is well to emphasize the qualification "some" light, for the proportion of 40 tanks to 40,000 men, the presence of only two mechanicalized field brigades, of a single experimental Birch gun, of only a few odd specimens of cross-country transport, did not permit of anything approaching a full test. Yet, as it proved, the light was more than might have been expected,

though it came, with a few exceptions, more from the failures of the older instruments of war than from the brilliance of the new.

In order to avoid the common criticism of making examples fit theories,it is advisable, at the outset, to catalogue the salient facts of the operations, and then to deduce therefrom what appear, to the writer at least, some obvious and common-sense conclusions.

On the opening day the Wessex commander used a mobile force for a rapid thrust to overwhelm an isolated fraction of the enemy and to delay the advance of his main columns. This mobile force, under the cavalry divisional commander, consisted of two cavalry brigades, a so-called mechanicalized infantry brigade in lorries, and artillery, both horse and dragon-drawn. The cavalry thus formed the main part of this force. What did it achieve? One cavalry brigade moved out and watched the flank, practically sitting still all day—no fault of theirs, in actual fact. The other exerted so feeble a degree of pressure that it failed to cause the Mercian detachment near Whitchurch even inconvenience. These two cavalry brigades—and neither delayed the Mercian advance nor struck an appreciable blow—acted, to all intents, as the gallery for the piece to be played by the infantry, when the latter arrived on the stage. The infantry, having been moved only a few miles in lorries, were "debussed" ten miles from their jumping-off position, and as a result of this move any advantage of bringing these troops up in lorries was lost. Instead of arriving early in the morning, when their attack might have endangered the isolated forward troops of the Mercian force, they only came into action late in the afternoon. By this time the Mercian 2nd Division, by a splendidly rapid march, had arrived on the scene, with the effect of more than restoring the balance of numbers. That the Wessex 7th Infantry Brigade's attack, by its skill and vigour, pressed back superior numbers does not affect the fact that it was too late for its true purpose. In war it might easily have put its head into the noose.

Now for the salient fact of the second day. The Wessex force fell back without being followed; its withdrawal was apparently unknown to its enemy until there was a gap of several miles between the rival forces. Contact, accordingly, was completely lost. That afternoon part of the Mercian 4th Division attacked—and its blow landed in the air. To spectators there was inevitably a humorous element in the spectacle of this simultaneous attack and withdrawal with a No Man's Land of several miles between. Next morning a further and bigger attack was staged, and again it hit the air, for the Wessex troops had leisurely marched back a few more miles.

The third day's operations yield several facts.

The first is that the Mercian tanks, after a brilliantly successful night manœuvre of thirty-three miles, did not achieve as much result as the initial success warranted. Three causes combined to curtail the profit of what many, including, it is rumoured, the enemy's command, regarded as the most important positive feature of the whole manœuvres. The

first of these was unavoidable; tanks have not the liberty of movement on manœuvres that they would enjoy in war, where damage does not count. The second and third causes were avoidable. The bullet is a juster arbitrator than the umpire; several illogical decisions in the minor umpiring might have been heard, decisions which had no relation to the practical experiments at Lark Hill and Lulworth. Further, the tank blow itself was dissipated instead of being concentrated like the initial move. The cause seems to have been partly lack of information.

The second fact is that the Mercian infantry attack did not develop until a late hour in the afternoon, and even then had not begun to exert more than a partial pressure when the "Cease Fire" sounded. The experience of the 1st and 2nd Division exercise during the previous week suggests that nightfall would have stopped the attack, and allowed the enemy to break away again, before any decision could have been obtained.

The third fact is that the Wessex cavalry division, after making an excellent swing round to the southern flank and dealing an opening blow against the flank of the Mercian 1st Cavalry Brigade, came practically to a standstill This innocuous ending seems to have been due partly to the fact that they went gaily past a large wood, in which was concealed a Mercian force of tanks, infantry and cavalry, without even discovering their presence! The partial attack by these latter against the Wessex cavalry division's flank and rear apparently dislocated their plans of action. On the other side also, as a debit, must be mentioned that, through lack of "eyes," this Mercian force did not seize the opportunity for a prompt and thorough blow to crumple up the Wessex cavalry division in flank—as they could have done, had the situation been realised.

Finally, the supreme fact, the climax of the whole three days' operations is that the three Mercian infantry divisions, the major part of the forces which took part, marched as far and as fast as infantry have ever done—and yet hardly came into action. If the director's instructions had not stopped the Wessex withdrawal on the last day, in order to avoid a completely tame and negative finish, not even a semblance of infantry fighting would have occurred after the first day's purely local encounter.

If these facts are here stated somewhat bluntly, it is partly because they are a matter of common knowledge and discussion among the soldiers who took part or attended as spectators. Partly also because they need to be impressed while still fresh in our memory, for there are already signs of an attempt to shroud the realities of the manœuvres in a cloud of time-honoured, or dishonoured, catch-phrases. It is refreshing to find that among serving soldiers who helped to direct or took responsible parts in the manœuvres, nearly all are most frank in their recognition of the facts, and anxious to draw true lessons; they are too wise to comfort themselves with illusions. But there are others whose outlook is more conservative, whose worship of tradition more deep-seated; they, indeed, are surely blinding themselves and seeking to blind others to unpalatable truths. The columns of the press have contained such phrases as "one fact, and an important one, has clearly emerged, and that is that the infantry

are still supreme; that is to say, the decisive factor in battle." Yet how can this be? How is it possible to deduce such a "clear" lesson from operations where the infantry did not properly come into action! Another correspondent argues that "The balance of advantage was entirely and unequivocally with the cavalry . . . the cavalry division pushed on rapidly over the frontier, preserving its mobility all through, and by the afternoon had planted itself upon a line which flanked the advance of the northern Mercian column." Is this not doing the cavalry an injustice? The cavalry arrived in the morning it is true, but what could be the good of their "planting" themselves thus if such an action could do nothing to delay or embarrass the enemy's advance? It is justifiable to draw divergent lessons from identical facts but are not these criticisms a trifle wide of the mark or a little premature? Are they not at bottom an attempt to disguise the actual facts, that are known to thousands of participants and spectators?

It would seem possible, however, to derive some most valuable, if negative lessons from the manœuvres—at least as they were seen by the writer. It is also far better to avoid all the catch-phrases belonging to an age that is past, when the conditions and means of war were totally different. Warfare has been thrown into the melting pot and the fact lends greater force than ever to Milton's words, in the Areopagitica, "All opinions—yea, even errors—known, read and collated, are of main service toward the attainment of what is truest."

First among these general deductions must be set the degree to which the manœuvres confirmed the evidence of 1915 and 1917, of our evacuation of Gallipoli and the German withdrawal from the Somme to the Hindenburg Line. Modern war conditions have made a withdrawal in face of the enemy far simpler and less hazardous than ever before. Military history had stamped it as the most difficult of operations, the highest test and proof of generalship. Now, machine-guns, demolitions, the dispersion enforced by modern fire, and the very fact of the greater fire-power of infantry have combined to make a withdrawal, given capable generalship and staff work, the easiest operation of all in war. A few machine-guns, carefully sited and distributed in depth, can delay the advance of whole brigades of cavalry and infantry. The mining of bridges and cross-roads creates yet greater obstacles because of the variety of weapons with which the infantry are now equipped; they cannot even man-handle their machine-guns except for short distances, and require the support of pack-artillery to overcome enemy machine-guns. Thus their advance is like a three-legged race, for their already low mobility is further curtailed by the quantity of wheeled transport necessary to carry their weapons other than the rifle and bayonet.

The dispersion characteristic of the battlefield of to-day is all in favour of the weaker force, for it increases its chances of slipping away unseen. Without diminishing the credit due to the Wessex command for the ease with which, although they were the weaker side, they fulfilled the object given them, it is only just to point out that the Mercian task

was almost hopeless from the outset. The lesson would seem to be that in present and future warfare " superiority of force " as such and by itself is of no value; the advantage now lies with " superiority of mobile force." How much too is the delaying power of modern armies increased if mustard gas should be used? Such use is recognised as inevitable by most practical soldiers, in contrast to the idealistic framers of international agreements. In that case we must augment the expression " mobile force " and use instead that of " mobile protected force."

A second deduction is that the progress of air reconnaissance has not modified the cardinal tactical principle of war—that, in order to strike the enemy decisively it is required to fix or pin him down. Strategically aircraft have done much to dissipate the fog of war; tactically its effect is less complete Armies are still like " men fighting in the dark,"[1] and unless it is possible to grip the enemy with one hand, the intended blow with the other fist may land in the air. On the first evening of the operations the Wessex commander seemed to have pinned himself by the thrust near Whitchurch, which, though not strategically necessary for the attainment of his purpose, was planned, it is said, in order to afford certain practical lessons. Despite this, on the second evening he had slipped right away, and nearly ten miles separated the rival forces. If this outcome is nowadays partly due to the ease of a withdrawal, it seems also to have been due to the Mercian commander's plan. One gathers that he feared that early pressure by the 2nd and 4th Divisions in the north might frighten the enemy back and so stultify the manœuvre planned for the 1st Division in the south. His cautions were perhaps too rigidly interpreted by the subordinate commanders on the spot and the Wessex force was allowed to slip away and break contact. To the French military mission, General Weygand especially, this result may well have been interesting, for it lent new emphasis to the truth of the cardinal maxim—that of fixing the enemy—in Marshal Foch's pre-war teachings. It has certainly justified the great stress laid in the French post-war regulations on the point that, once contact is made, it must never be lost.

The Mercian commander's plan for the third day was to envelop the enemy, supposed to be standing on the line of the Rivers Test and Bourne, by his 1st Division in the south and 2nd Division in the north, while his mobile force, composed of the 1st Cavalry Brigade and mechanical column, was to swing right round the enemy's flank and strike in on his rear. But the pincers closed on nothing, and only the mobile force struck a tangible foe.

The third deduction concerns what was perhaps the most important and significant feature of the whole manœuvres. For almost the first time in post-war exercises the tanks were used for an offensive *rôle* calculated to gain the full advantage from their qualities and limitations, instead of frittering them away on minor and local enterprises. Instead of confining fast tanks to close co-operation with slow infantry, the Mercian commander kept all in reserve until he was ready to strike hard and

[1] See lecture delivered at the R.U.S.I. by the writer in February, 1921.

decisively. Then he used them as a whole for a 30-mile sweep round the flank of the enemy, who should have been, but unhappily was not, pinned by the Mercian infantry divisions. This conception showed a foresight and a grasp of the attributes of a modern army's armament that mark the artist of war compared with the mere artisan. It revealed that the idea put forward at a R.U.S.I. lecture by Colonel Fuller a year ago, is being accepted, namely, that the light fast tank is the science-bestowed means of reviving the decisive rôle of cavalry. When modern fire made true cavalry action, which is mounted action, impossible, warfare became stagnant and generalship was sucked down into the morass of trench warfare. This manœuvre of Sir Philip Chetwode was not decisive—partly through the infantry failure to pin the enemy, partly through the inadequate proportion of tanks in our present establishment, partly through their present lack of "eyes," as well as the factors of umpiring and damage mentioned already. But the incomplete result does not alter the importance of this far-sighted conception of the correct tactics of the future; and, even though incomplete the attack proved to be, the casualties and the obvious damage to the enemy's local command and communication centre—as estimated by the umpires—exceeded all those achieved by any of the older arms in proportion to the respective cost of all attacks.

There is a fourth, and less direct, deduction which may also be put forward—that is, that we are far too much absorbed with the idea of "positions," both of taking them and of occupying them. The main argument for the paramount rôle of infantry is that they alone can occupy positions. The question may now be fittingly propounded as to whether the need for this capacity is so essential, or its value so dominating, as is commonly supposed. Navies have always commanded vital arteries without occupying them; is there any reason why the mobile armies, the land navies, of the future should not do the same? Is it possible that Sir Samuel Hoare's phrase, "control without occupation," should be the key to the future? The Royal Air Force is working on these lines in Mesopotamia, a country far less suitable to such control than the highly organized fabric of a civilized nation. Tanks and armoured cars, combined with aircraft, may well render such a policy feasible in land warfare of the future. Even in the strictly military sphere positions are losing their value. In the exercises preparatory to the manœuvres, one divisional commander seized and occupied a position that, according to all the text-books, should have given him command of the situation. But, instead of attacking him according to all accepted principles, the opposing divisional commander slipped round in the night and struck direct at his base and communications. This argument may be reinforced by quoting the remarks of one of the most prominent actors in the recent drama played in Hampshire and Wiltshire: "In my opinion our present idea of objectives is wrong. The infantry cannot fight unless they are maintained with food, ammunition, etc., and unless they are directed from behind. As long as we endeavour to attack these vital points by

pushing through infantry defences and ' mopping up ' as we go along, we may go on for years, as we did in the Great War. As was then shown, armoured mechanical vehicles in sufficient numbers can push through the ' crust ' and attack the vital localities in rear."

Now, to summarise the deductions concerning the individual arms.

If the manœuvres were ever regarded in the light of a test of the present value of cavalry, as has been upheld in some quarters, then there is good cause to believe that their verdict must be as emphatically negative as the achievements of the arm itself. Although there is a growing opinion that the value of cavalry for European warfare is not commensurate with its cost; although it may be justly argued that cavalry must be reserved for areas like Palestine, where war has actually proved horsemen to be still essential and of dominating value, it must be admitted that to judge cavalry on their performance in these manœuvres would be absurd. The cavalry never had even a faint chance to show whether cavalry—horsed cavalry, that is to say—boldly and skilfully handled, could be effective in present-day warfare. Nevertheless, if there be any one lesson to be derived from these manœuvres, it is the unwisdom of improvising formations at the last moment and of expecting them to function properly.

With the infantry the case is different. The men did all that lay in human power to afford an adequate trial of the present value of the foot-soldier. The distances they covered, their speed of movement, their march discipline and cheerful endurance of vile conditions were alike admirable. They proved more than worthy of comparison with their predecessors of 1914. So, by the very merit of their feats, they threw into stronger relief the lesson that the day of muscle power has waned. The impossibility of conducting mobile warfare with troops who are tied by the limitations of the human leg is surely apparent, especially when the smallness of the manœuvre area is compared with the size of any recent theatre of war. But, if infantry are to be mechanicalized, we must take to heart the lesson of the manœuvres that short moves in lorries are useless. Nothing under a 25-mile bound is worth attempting, and in the future, so it seems to the writer, the distances will tend to surpass by far even this figure. Complementary to this lesson is the deduction that mechanicalized columns of any kind, including tanks, stand in urgent need of " eyes " for their information and protection, which alone can make bold movements possible. A combination of armoured cars and motor-cyclist riflemen might be one solution; another is to carry armed patrols in light cross-country motor vehicles of the Kégresse type.

As regards actual infantry tactics, the preliminary exercises supplemented the manœuvres in yielding lessons. Points that need greater attention and study seem to be the maintenance of contact, the question of keeping touch with neighbouring units, initiative and method in following up and exploiting local successes. The failure to use company and battalion reserves, unless there was scope for a wide outflanking manœuvre, was very commonly witnessed. These are matters of training,

but there exists one difficulty inherent in our present organization—that is, the fact that the infantryman is converted into a veritable Christmas-tree of weapons, so far that his essential battlefield mobility is negatived. A measure which deserves careful consideration would be the reorganization of the company on the basis of one Lewis gun and three rifle platoons, for at present there may be witnessed the absurdity that the inexperienced platoon commander has to play a more difficult and complex tactical *rôle* than his experienced company commander. Simplification of the infantry weapon and organization is the more urgent because yet an addition is necessary in another direction. At present the helplessness of infantry in face of tanks is such that—under the stress of war—the men's moral is endangered. Once lost, it is not easily regained; hence the urgent need arises to grant the battalion some anti-tank weapon of its own, which might be the ·5-inch Browning armour-piercing machine gun, borne on a Kégresse car or in a one-man tank.

Above all these questions, however, is that of recasting our ideas concerning the rôle and action of infantry. To cover the whole front with infantry, spread like butter on bread, irrespective of the nature of ground, is no longer feasible under the changed conditions of to-day. Instead, there seems an urgent need of carefully selecting infantry sectors of attack, ground where cover exists, where the ground is least favourable for hostile machine guns and for tanks, whether hostile or friendly. Even at those points where effective infantry attack is possible, no definite frontages but only general lines of advance should be allotted, so that subordinate commanders can concentrate their effort along the most covered lines of approach. When we remember the scale of the artillery concentrations of the Great War that were thought necessary to pave the way for infanrty over open country against machine-gun defences, and the relative strength of our present artillery support, we should realise that the universality of infantry action has come to an end. Infantry must become a special arm for a special rôle, just as are tanks, artillery, aircraft and cavalry. We call infantry the "queen of battle," and then degrade it to the level of a despised domestic drudge.

Turning to the effect of the air force, two, out of many other, deductions must be mentioned here. First, that the effectiveness and skill of the air attack emphasises the obsolescence of muscle-moved columns in a campaign of mobility, for, if the latter march on, they will be wiped out; while, if they disperse to seek cover repeatedly, they will never get forward. In reflecting upon this we need to remember how few aircraft were employed compared with those available in certain foreign countries. Second, the general lessons of air reconnaissance appear to be that troop movements by daylight are almost impossible to conceal, but that, while a total surprise is hardly to be expected, a skilful commander by means of ruses can mislead and bewilder an opponent almost as much, if not more, than before the arrival of the aeroplane. The only possible antidote to this state of affairs is the use of trained army officers to gain information for their commanders, and hence the indirect conclusion is reached as to

the essential need of a military air arm, for which the best co-operation between different services is no substitute. This must be achieved not at the expense of, but in addition to, the R.A.F., which has a rôle of its own to perform—a rôle that has an importance and scope that is almost incalculable. Hence the inevitable conclusion seems to be that an army should provide its own air arm from its own resources; but, whatever is done, an army must have its air force under its own control.

One brief note must conclude this summary of a few of the many lessons which the manœuvres emphasized.

Ever since the war, experiment has been the keynote. But the paramount lesson of the manœuvres is that our organization must at last take definite shape, if we are to have an army that is an effective weapon of war. We cannot go back to 1914, therefore we must go forward. Canute's courtiers, urging him to resist the tide, were no more childish than those who wish to resist the inevitable trend of scientific progress. Let us remember not only that every change has been opposed, but also that the new has always conquered the old. Instead of waiting to learn by bitter experience, would it not be wiser for once to anticipate this experience?

ENGINEERS AND THE ARMY.

By MAJOR-GENERAL H. F. THUILLIER, C.B., C.M.G.
Director of Works and Fortification.

On Wednesday, 7th October, 1925, at 3 p.m.

LIEUT.-GENERAL SIR G. M. W. MACDONOGH, G.B.E., K.C.B., K.C.M.G., Colonel Commandant, Royal Engineers, in the Chair.

THE CHAIRMAN: Ladies and Gentlemen, I do not think the lecturer requires any introduction from me, for I am convinced that everybody knows General Thuillier.

LECTURE.

CAN we say that the Engineers have been in the past or that they are, even at the present time, as truly an integral part of the Army as, say, the Infantry? There are many, at all events, who think not. In admitting this point of view, there is not the slightest need to suggest that such a state of affairs is due to any peculiarities of disposition, either in the Engineers themselves or in any one else. On the contrary, its causes have their roots far back in history, and, if we trace them out, we shall discover how it is that conditions which have long since passed away are still, even at the present day, exercising an influence on our system of organization, training and work in the field. These same causes, moreover, tend to perpetuate the divisions between the different branches of the Army.

The deepest root of all those that affect this question is one that probably might not be suspected: this is the old historical struggle between King and Parliament for the control of the Army. One of the manifestations of that struggle was the fact, well known to students of the history of the Army, that up till the middle of the 19th century the Artillery and Engineers formed a force entirely separate from the Infantry and Cavalry. The control of the first-named arms, as well as the responsibility for the provision of armaments, ammunition, engineer materials and stores generally, was vested in the Board of Ordnance, presided over by the Master-General of the Ordnance. The position of this official had little or no analogy with that of his namesake on the Army Council of to-day, since it was a political appointment, the holder of which was directly responsible to Parliament and quite

independent of the Commander-in-Chief, who commanded the Cavalry and Infantry only, or even of the Secretary-at-War who administered those arms. The M.G.O. was in fact a Minister, at one period a Cabinet Minister.

In addition, in every garrison there existed a miniature counterpart of the Board of Ordnance, consisting of the Commanding Officers of the Artillery and Engineers, with a civil official called "The Storekeeper" who was presumably the C.O.O. of that period. This Committee, known by the title of "The Respective Officers," had extensive powers. They only recognised the Board as their masters and reported direct to that body without any reference to their immediate military chiefs. The Board were, moreover, jealous of any interference with the powers of their subordinates, and supported them energetically whenever the latter came into collision with their military superiors. It is not to be wondered at that such a system worked badly and was the source of constant friction.

This position of the Artillery and Engineers as large military corps under a totally separate jurisdiction from the remainder of the Army was a curious one. The officers did not obtain their commissions or steps in rank by purchase as did the rest of the Army, but by nomination and selection. They practically never held military command of mixed formations in war or peace, but, on the other hand, they enjoyed certain advantages over the other arms in the matter of emoluments, quarters, and the like. Generals very naturally looked rather coldly on men who, though nominally under their command, were in reality only partially amenable to their control, and between whom and the Army at large there was an absence of that feeling of comradeship so essential in the units of a fighting force. Even in war, when they were to a large extent free from the control of the Board of Ordnance and came more wholly under that of the General Commanding, the same tendency to separate action showed itself. This may have been partially due to the habits of peace procedure being too ingrained to be shaken off, but it was also to a large extent accounted for by the tactical practice of that era.

One of the peculiarities of the latter was that the conduct of sieges and defences of fortified places was considered to be the business of the Engineers only. Other arms, such as Infantry and Artillery, took part in the operations, but the dispositions were controlled by the Engineers. It was looked upon as a technical affair, beyond the comprehension of the Commander and his staff who more or less stood aside and let the professors of the engineering cult do the job, much in the same way as the ordinary man lets a lawyer do his business for him, when he is so unfortunate as to get into the law courts. A couple of examples will illustrate this fact. The first is taken from the siege of San Sebastian during the Peninsular War. On that occasion after the artillery had made breaches in the ramparts, and trench operations had secured covered assembly positions at assaulting distance therefrom,

an attack on the breaches was planned and delivered. It was, however, repulsed by the French defenders with some loss. The failure was attributed to faulty arrangements for the attack. This is what Fortescue says of it: "The arrangements for the assault were infamous. Firstly, the 38th, being assigned to the more distant breach, should of course have led the columns; but on the contrary they were stationed in rear of the Royal Scots and 9th; secondly, the time of low water had been miscalculated (the fortress was practically on the sea shore) and the tide left insufficient space for the progress of the troops except in straggling and disconnected bodies. Lastly, whereas Wellington had expressly recommended that the attack should take place by daylight, the hour was fixed for half past four in the morning, when it was still too dark for the batteries on the east bank of the river to open fire on the defences." . . .

"The consequences of this reverse were very much more serious than could be calculated from the mere loss of men . . . . There arose in consequence a distrust, which nothing could overcome, of the skill and competence of the Engineers. The last, by the confession of Burgoyne, had certainly been guilty of one serious blunder by building their breaching batteries and making their breach before the trenches were sufficiently advanced to shelter the storming parties and thus revealing their plan prematurely to the enemy."

The modern soldier might naturally remark "why blame the Engineers?" If to-day we heard of an attack which failed because the battalion which should have led was placed behind the others; where, through miscalculating the hour of low tide, the troops had insufficient room to maintain their formation; when the hour fixed was before daylight (in neglect of the orders of the Commander-in-Chief on the point) with the result that the artillery could not see their targets, what should we say? Well, if we were regimental officers we should no doubt say "Bad staff work again!" But the Commander-in-Chief of the Armies and the Army Council would unhesitatingly put the responsibility on the General in command of the operation, and we can hardly doubt that he, and probably his principal Staff Officer, would be relieved of his appointment and would take an early boat to England for a period of enforced leisure. But it was not so in the Peninsular War.

Fortescue continues his criticism of the Engineers by saying: "It may be unjust to hold the Engineers exclusively responsible for the conduct of the sieges undertaken in the Peninsular war, but there can be no doubt that one and all of them were grossly mismanaged." You see he merely suggests the possibility of there being some extenuating circumstances for the failure of the Engineers or of some other persons having some small share of the blame for it. He clearly indicates that the faults were mainly, if not entirely, that of the Engineers. He refers to *their* blunder in building *their* batteries and making *their* breach too soon (nothing about the artillery, you see) and revealing *their* plan

(not the General's plan) to the enemy. And he is quite right. It *was* the responsibility of the Engineers. As I have told you, at that period, when siege operations, or any requiring engineer work, were undertaken, the Commander and his staff practically surrendered their functions to the Chief Engineer, who prepared the plan, whether of attack or defence located and superintended the construction of the batteries and trenches, decided when to open or withhold fire, and organised the arrangements for the assault, providing for the latter a subaltern officer to lead each column to the breach.

The other and even more striking case I have to show you is an extract from the letters of Major-General Sir Archdale Wilson, who commanded the British force at the Siege of Delhi. This is what he wrote at the time:

"Very little was done by the Engineers last night. A battery for 18 guns and another for 10 heavy mortars were armed, but not allowed to open, contrary to my advice and earnest request; the Pandies consequently, and as was to be expected, made sorties upon both our left and right Batteries."[1]

What a situation! The General Commanding-in-Chief obliged to resort in his dealings with the Engineers under his command to "advice and earnest requests," which, moreover, were not acceded to! But in the light of what I have said about the custom of that period such a state of affairs can be understood. In siege operations the Engineers assumed, by consent, the functions which would now be those of the General Staff and even imposed their will on General Officers Commanding.

The Master General and Board of Ordnance were not abolished till 1855, after the Crimean war had brought to a head the evils of the system of dual administration. From that date onward the Royal Engineers, together with the Royal Artillery, were placed under the direct orders of the Commander-in-Chief, while the services of Fortification and Barrack Construction were placed under the Secretary of State for War. It may be considered, therefore, that it was only at that comparatively recent date,—that is, about 70 years ago,—that the Artillery and Engineers were, in point of fact, brought into the Army —and that, too, was even in theory. Where Army reform is concerned practice does sometimes lag a good way behind theory. When you come to consider the circumstances, the long-standing history of separate existence, the backward state of military science existing at the time of the Crimean War and for many years after, and the technical nature of their duties both in the field and in peace, it is not surprising that the process of welding the Engineers and their work (I am not concerned in this lecture to speak of Artillery) into the structure of the army took a very long time. There is reason, indeed,

[1] Journal of the United Service Institution of India. "The Mutiny Day by Day." Col. H. R. Neville, C.I.E.

to believe that the process had not been entirely completed at the outbreak of the Great War in 1914.

The entire question has two aspects, namely, that of the attitude of Engineers towards the Army, and the converse, the attitude of the Army towards Engineers. In regard to the former, if it should be said, and I have heard it said, that the Engineers, even to-day, have a tendency to work in a water-tight compartment of their own; that their co-operation with the rest of the Army is not so complete as it might be, we need not ascribe that fact to contrariness on their part. Let us remember that the old dogma has inspired their history, their traditions; it has almost been bred in their bones that Engineer work in war is a technique, a cult, which no man can understand who has not been apprenticed to it; that, when siege operations supervene or Engineer considerations of other kinds assume importance, Commanders and their staffs should delegate their functions to the hands of the Chief Engineer.

Modern war, however, is too complex to permit of this practice. There are many technical weapons and activities in an Army of to-day. If each branch, when its own technicality developed importance, insisted on directing its own work independently of the Chief Command, chaos would result. Every one of them, whether Artillery, Engineers, Tanks, Gas or Air Squadrons, have to put themselves, and keep themselves, under the direction and control at all times of the Commander-in-Chief, and not only the Commander-in-Chief but also of the Commander of each subordinate formation. An Army is not composed of Infantry, Cavalry, Artillery, Engineers, etc., all working under their own chiefs in water-tight compartments. If it were, it would not be an Army but a department. The composition of an Army is quite different. What we know as a "British Expeditionary Force"—a somewhat inappropriate term for what may expand into a body of several millions—is composed of "Armies," "Corps," and "Divisions." It is only the Division that is composed of Infantry, Cavalry, Artillery, and Engineers, each under its own Commander. With a composition of this nature unity of direction in each formation becomes the essential requirement. The experiences of the Great War have brought us to face this fact, even if we did not know it before. It is therefore impossible for engineering operations in the field to be directed by an Engineer-in-Chief from Army Headquarters. All orders regarding the work of Engineers must proceed from the Staff of the higher formations to the Commander of the next lower one, not from the Senior Engineer of the higher to the Senior Engineer of the lower. Are Chief Engineers and an Engineer-in-Chief therefore superfluous? On the contrary, they are indispensable, while their functions are not executive, but advisory.

We must clearly keep separate in our minds the respective functions, in connection with Engineer work in the field, of the Commanders and Staffs on the one hand and of the Chief Engineers on the other. What

we all aim at is to ensure that the Engineer troops, plant and stores, are used to the best effect in co-operation with the other arms and that the great resources which engineering science in these days makes available should be employed to the utmost extent practicable in the assistance of the Army in its operations.

Engineering works in a theatre of war fall into two classes: (i) field engineering, which is intimately connected with the tactical operations and is carried out by the troops (including Engineer units) under the Commanders of the fighting formations, and (ii) works services, which are all engineering work of a general nature which have not an immediate bearing on tactical operations, such as those at bases and on lines of communication. These are carried out under the direct responsibility of the Director of Works, acting under the control of the Q.M.G.

Time does not admit in this lecture of my referring to the second of the above classes of work at all, and all my remarks must be taken as bearing only on field engineering operations. It is with these alone that the Engineer-in-Chief and Chief Engineers are concerned. Their functions are, broadly speaking, to provide advice as to the manner in which Engineer resources can assist in the execution of the plans of the Commander; can economise man power; can protect the troops in contact with the enemy from the enemy's weapons, or sometimes from the climate; can expedite movement of our own troops or hamper that of the enemy.

The principle of unity of direction makes it imperative that all decisions to undertake operations entailing engineering work must be made by the Commander of the formation and that the Staff should undertake the duty of co-ordination and control of field engineering work throughout the Army. The executive of field engineering work depends directly upon an adequate supply of the necessary materials and stores. It is, therefore, necessary that the staff should control the supply of engineer stores,—that is to say, that they should prepare forecasts of requirements, " ration " the available supplies to formations or areas of the theatre of war, and arrange for their transportation to the sites where required. Also they must be responsible for the preparation of general schemes of field engineering, having in view the available supplies of labour and material, they must allocate to subordinate formations the works to be executed and organise any special arrangements that may be necessary, such as additional *personnel* or special material or plant. In order to illustrate this I will quote two cases of common occurrence, where action by the Staff is necessary in order to enable the Engineers to execute the Commander's orders.

(i) The Commander orders some extensive demolitions. It is the responsibility of his Staff to see that the exiguous supply of explosives with the Division is supplemented to the extent necessary for the efficient execution of those demolitions.

(ii) A Divisional Commander, after receiving reconnaissance reports, orders a specified number of pontoon bridges to be thrown over a river at certain points. It is for his Staff—

(*a*) to verify that the pontoon equipment placed by Corps at disposal of the Division is sufficient to construct all these bridges;

(*b*) to make march arrangements which will enable the bridge train (probably occupying half a mile of road space) to be got forward from the rear to the head of the columns at the appropriate hour.

The function of the Engineer-in-Chief, Chief Engineers and C.R.E.S. is to provide the technical advice and assistance without which the Staffs and Commanders could not possibly exercise the above responsibilities. It is not necessary to enter into any detail as to how these technical officers exercise their functions. These are laid down in the amendments to Field Service Regulations, Vol. I., sec. 66, issued in December, 1924. What I am more desirous of emphasising to-day is what is necessary on the part of future Commanders and Staffs to enable them to perform their functions in this connection in such a manner as to ensure that the best effect is obtained from the Engineer branch of the Army and from engineering science in general. Whilst in fact it has been necessary to inculcate on the more Senior Engineer Officers that they must not snatch at the sceptre of authority which was rightly removed from them in 1855, however galling it may be to them; if in their opinion the best use of the Engineer Arm is not made to assist in effecting the Commander's plans: it is now necessary to observe that, if the sceptre is left lying on the ground the temptation to the Engineer is very strong, and that it is very desirable that it should be picked up and wielded effectively by Commanders with the aid of their Staffs.

Much more is necessary than is, or can be, embodied in any Regulations. It is necessary, for instance, that they should be thoroughly alive to the advantages in regard to economy in man power and economy in lives which are obtained from the timely use of engineering resources. That they should equally be aware of its limitations, and in particular of the conditions necessary for its successful application. They have also to remember always that field engineering is a tactical operation and as such must be planned and organised by the Commander and his staff and, moreover, that it is often a combined operation requiring other arms besides Engineers for its execution. That these points are by no means always realised is probably due to the causes to which reference has previously been made, namely, to the fact that in times not long past, engineer operations were not regarded as coming within the responsibilities of the Commander and his Staff, so that it was accepted as the invariable practice to leave their inception and execution entirely to the Engineers themselves: a time, in fact, when co-ordination

was a thing unknown. That these self-same points were not in the late war always realised by Commanders, Staffs and officers of other arms generally will probably not be denied. At any rate, every Engineer who took part in the war will testify to that fact, and by some in a very unreserved manner! Who did not at one time or another meet, and have to wrestle with, the Staff officer who wanted to march the *personnel* of field companies near the head of a column in case they should be required for Engineer work, while, at the same time, he wished to keep the wagons containing their tools and explosives, without which they could do no work whatever, with the second line transport on the grounds of the necessity of shortening the fighting column? Again, there could scarcely be one who did not—and probably frequently—find themselves asked by one branch of the Staff to execute certain works while the other branch refused to supply, or were at least very "sticky" about supplying, transport for the materials without which it could not be carried out.

There is perhaps a lot of "meat" compressed into the foregoing sentences, and a few simple illustrations may again be desirable.

(i) "Field Engineering is often a combined operation requiring other arms besides Engineers for its execution."

I would instance assault bridging which is essentially an operation for which the subordinate Commander of the assaulting infantry (probably the battalion Commanders) are responsible, with the aid of a few Engineers to assist in the preliminary reconnaissance for sites, to bring up the material to the assembly point, to supervise its formation into bridge, and to assist in maintenance of the bridge.

(ii) "Field Engineering is a tactical operation."

When a Commander orders a defensive line to be prepared by the Engineers, it is essential that the C.E. should design the works to fit the disposition of the troops proposed. He can neither dictate the disposition, nor can he guess them. How, for instance, can he site obstacles to be under fire if he is not told where the defending infantry will be posted? How can he site them again so as to "shepherd" the attackers into fire traps, if he is not told where it is proposed to put the traps?

(iii) Again, in the event of retirement of an unbeaten force seeking to gain time for a strategic move by the C.-in-C., the destruction of *all* the bridges over a river line may often be erroneous tactics, inasmuch as it shows a lack of the offensive spirit, and a lack of application of the fundamental doctrine of the economy of force.

It is also equally important that other arms, particularly the infantry, should realise that field engineering in war consists of operations of a kind in which they themselves are vitally concerned. In many cases they must themselves carry them out without any

assistance from the Engineers, beyond the provision of tools and materials; in many others, they must be prepared to co-operate with the Engineers in the execution of works which are probably designed solely for their own safety, or, in any case, constitute a necessary part of the operation which the division is carrying out by order of superior authority.

The idea prevalent in the Army at the beginning of the Great War seems to have been that all field engineering, even simple trench digging and the erection of wire obstacles, was the function solely of the Engineers; consequently, that when such work was required, the infantry should be able to requisition the services of Engineers to carry it out. Of course, it soon became evident that the number of Engineers in a Division was quite inadequate to deal with the amount of work required, and that all arms must be capable of carrying out such simple works without assistance. But, as their officers were untrained in the organization and supervision of engineering work, it was frequently necessary to get such work carried out by small bodies of Engineers with an Infantry working party attached. Such work was in the highest degree unpopular with the Infantry. Those employed upon it looked upon themselves as dragged in to do unpleasant work which was really someone else's job. They called all such works " R.E. fatigues " and apparently laboured under the impression that these were being undertaken for the benefit of the Royal Engineers, and that, if the Royal Engineers could not do them, then they should go undone; anyway, that it was unreasonable to ask them—the Infantry—to do them. Even when the work was for the direct and immediate saving of their own lives, they could not always see why they should be called on to assist in doing it. When the Germans had driven mines under our front trenches, and our Infantry manning them were in hourly fear of being blown up, they still grumbled profusely at having to supply parties to carry away sandbags full of earth which came out of the mine galleries which the R.E. tunnelling companies were sweating away to drive under the enemy. Yet it was obvious that the tunnellers themselves had not enough men both to mine below ground and to walk away with the bags of earth above: obvious it was also that they were not burrowing under ground in the greatest danger of their own lives just for their own pleasure, but solely to avert the imminent danger that threatened the Infantry.

All this was really quite natural. The practice of continual attachment of large working parties of infantry to the R.E. in order to provide extra labour was disastrous to the Infantry. It upset their platoon organization, reduced their strength and exhausted men who have more than enough exhausting work both in trench warfare and in moving warfare without it. No wonder both officers and men hated it. The system which made it necessary was essentially a bad one It arose from the fact that those responsible for the organization of the Expeditionary Force had no conception of the amount or the nature of

the field engineering work that modern war entails. That vast armies would face each other in hundreds of miles of trenches for nearly four years was, of course, not dreamed of, even by the most advanced thinkers.

The proportion of Engineers in a Division was, therefore, quite inadequate to undertake the necessary work. Beginning with only two field companies to a Division it was soon increased to three and later a battalion of pioneers was added. Even this increase did not preclude the necessity of attaching infantry parties to the Engineers. Works on the vast scale of trench warfare require "hands" in large numbers. Nearly every job requires a minor proportion of skilled men and a larger proportion of semi-skilled. You have either to arrange matters so that your Engineer organization contains both in suitable proportions, or, if it does not, you must indent on infantry to provide the extra hands. We elected for the latter course. The Canadian and Australian Military Authorities, entering the war after trench warfare operations had begun, elected for the former of the two alternatives, had a much greater strength of Engineers per Division, had the skilled artizans and the pioneers in the same units, and did not have to break up their infantry organization to find working parties to anything like the same extent as we did.

It is probable, however, that the principal reason why the infantry held the view that trench digging and wiring were no part of their duty was that they had not been trained so to regard it. This was partly because, on the accepted theory that modern wars would be wars of movement, the practice of field engineering by infantry had not been stressed. Now that it is all over, it is easy to see that if you send a force of four or five Divisions to oppose vastly greater numbers of a well-equipped and well-trained enemy the "movement" is bound to be in a backward direction for the smaller force until it is able, by digging itself in, to stabilise the operations for a time long enough to allow of more forces being organised and despatched to the front. Nevertheless, in spite of our still smaller army of to-day we are again training solely for a war of movement and neglecting training in field works.

This state of affairs shows the necessity that exists for the Staff to be clearly alive to the fact that field engineering operations may be vital to the success, if not even the safety, of our troops; that such operations cannot be left to the initiative of the Engineers alone. but must be foreseen and organised by the Staff themselves. This is, undoubtedly, a difficult process and requires much imagination and intuition. Such works cannot be simulated in peace manœuvres and the stern necessity for them only comes to light in the destructive conditions of war. A very distinguished and senior General told me in 1915 that at Aldershot, before the war, he had tried, but had been unable, to visualise the *rôle* of Engineer field companies in war. He had tried to interest himself in their training and co-operation with his infantry, but it had seemed to him unreal and of little value. In 1915, however,

after nine months of war he said he believed that the line of battle, on several occasions, could not have been held without them.

I have said previously that Commanders and Staffs must themselves foresee the necessity for engineering work and organise it. Let me give you an instructive example of what happens when they do not. The late General Townshend in his book[1] makes the following statement as one of the reasons that induced him to take up a defensive position in the Kut peninsula :—

" I intended to use my intrenched camp as a pivot of manœuvre, when, by improvising a fortified bridgehead, I should be able to throw the principal mass of my force on to either bank of the Tigris in an offensive against an isolated fraction of the enemy. Had my troops been able to work and get the bridge across the Tigris opposite the town of Kut, I should have been able to make an *active* defence."

You see the General attributes the failure of his plan to the inability of his troops to work. But, now hear what the officer commanding his bridging train has stated; this officer, Major E. W. C. Sandes, R.E., in his article on " The Decision to Defend Kut-el-Amarah," quotes the above statement by General Townshend and comments on it thus :—

" But his plans for an active defence were stultified by a lack of engineering information, and in this respect I should like to indicate how important is the question of the *liaison* of the General Staff with the Engineers. A bridge across the Tigris opposite Kut was impossible. I commanded the bridging train and had lost most of my boats and all my pontoons during the retreat from Ctesiphon when we were chased by Cavalry and had no escort. The river was 600 yards wide opposite Kut Town and I could have told the G.O.C. at once that the maximum length of bridge which I could construct, given several days to do so, was, roughly, 300 yards. If General Townshend had been aware that his system of active defence was thus rendered impossible, he might have altered his decision to remain in the loop of Kut."

We see, therefore, that, although the campaign, for hundreds of miles, was following the course of the river and facility of transfer of force to either bank was an essential element, care was not taken to protect from the enemy's pursuit the vitally important boats and pontoons without which bridging was impossible We see also that, although a bridge at Kut was to prove a vital element in the plan of holding that place, yet the precaution was not taken of ascertaining whether the Engineers disposed of the necessary materials to construct it; neither was the advisability perceived of detailing an officer in advance to collect local boats and other materials at Kut itself. A more striking example of the unfortunate consequences that may arise from a lack of appreciation on the part of a Commander and his Staff as to the necessity of being prepared for engineering operations on a large scale, it would be difficult to find.

[1] " My Campaign in Mesopotamia," by Major-General Sir Charles V. F. Townshend, K.C.B., D.S.O,

It is true that in these days the Engineers cannot run the engineering operations of the Army in a water-tight compartment of their own as they did in old days. It is even more true that the General Staff must itself control and organise such operations, must consult the Engineers and entrust them with a foreknowledge of the Commander's plans so as to give them a chance of preparing the requirements for executing them. None the less the fact remains that the various branches of the Army are still all brought up and trained in water-tight compartments. We have the great disadvantage of starting our military career in different military colleges, Infantry and Cavalry in one, Artillery and Engineers in another. So at the most plastic age we are introduced into a narrow mental groove, in which we are made to work almost entirely at our special branch of the military art and learn all too little of the work of the other arms. We become in mental outlook partisans of one particular arm before we have really become soldiers. All our regimental traditions and training serve to continue us in our grooves.

Esprit de corps is a most valuable thing and without it the Army would lose efficiency. But when *esprit de corps* tends to make us disdain or neglect the study of the work of other branches it becomes an evil. The Staff College course, to the few who are fortunate enough to undergo it, is a corrective to the mental inelasticity which is apt to follow from continuous experience in one branch only. But so deep are the grooves which our system carves in our mentality that they frequently survive even that experience, so that it is not impossible to find officers even in the higher staff posts considering questions from the point of view of their own arm alone.

What we really require is some system (this, no doubt, is most difficult to bring about!) which will secure for all officers a training that will make them from the very beginning of their careers look at a military problem not with the eyes of an Infantryman, Cavalryman, Artilleryman, or Engineer; or not even with those of a mechanical enthusiast or of the Airman, but solely with those of a soldier. Although they may only be required to exercise the duties of one arm, yet it is essential that they should fully realise that an army's mission requires the active and close co-operation of all its various branches, and that this object can only be secured when each one is so far acquainted with the work and capabilities of all the others that it will know instinctively the extent and the manner in which reciprocal help may be expected and given. Lastly, it is of particular importance that those who aspire to employment on the General Staff or in higher commands should retain an elastic outlook sufficient to enable them to be prepared to use any and every new weapon or means of transport which scientific and industrial development may place at the soldier's disposal, and that they should have the mental energy to learn something about their possibilities.

It is only by such an attitude of mind that we shall get away from

the old idea—an inheritance as I have said from old times—that each arm and branch works in a separate compartment, and that the operations of each are no concern of the others.

DISCUSSION.

THE CHAIRMAN: I now invite officers to take part in a discussion on the subject of the paper. Perhaps the Chichele Professor of Military History would like to open the discussion.

MAJOR-GENERAL SIR ERNEST SWINTON: I have heard with the greatest interest and learned much from the lecturer's opinions about the function of the Engineer arm in war. He has pointed out the ways in which the different branches of the Army fail to work together and has explained why, owing to the history of the formation of the Corps of Royal Engineers, its members have been particularly inclined to live in a groove and carry on their special activities apart from the rest of the army. I am in hearty agreement with him as to the undesirability and danger of any branch of the service thus holding aloof and working apart from others. It is, of course, a well-known tendency of any profession, whether it be that of engineering, law, medicine, art, or games, to magnify the importance of its own technical knowledge and activities and to exaggerate these into a sort of cult or magic. This, of course, has to be combated, especially when it concerns operations in the field, where team-work and cooperation from top to bottom is so essential.

But, in regard to such an important part of warfare as that which is comprised under the word "Engineering," there is another side upon which I should have liked to hear the lecturer say a little more. The work of the military engineer covers a very wide range. Broadly speaking, he is responsible for dealing with the forces, accidents, or phenomena of nature so as to control, ameliorate, or exploit them for the purpose of rendering possible and assisting the operations of a campaign. As the range of human knowledge and scientific achievement increases, the more powerful becomes the help he can render and the more valuable his knowledge and advice to a commander in the field. The weight to be attached to his sphere of activity is increasing every day, and will go on increasing as war becomes more and more an extremely complicated business, dependent on the exploitation of the latest discovery or invention, whether it be called scientific or not. It seems, therefore, that this sphere demands at least as much attention as any other, and that those of the military hierarchy responsible for it should carry great weight in Council.

Is this so?

I do not think that it always has been the case. And I am inclined to suspect that the "aloofness" on the part of the Engineering branch to which the lecturer has alluded may be not only due to the causes he mentions, but may in part be a reaction brought about by the fact that the importance of its work has not always been realised. So the Engineer has not been consulted in time, that is beforehand, and so his opinion has been ignored. As an example of the attitude in these matters, eleven years ago, when the Expeditionary Force—which, as General Thuillier truly remarked, afterwards swelled to an army of millions—went to France the senior officer responsible for the Military Engineering duties of this force was a Colonel of the Royal Engineers with the temporary rank of Brigadier-General; and the immediate staff he had to assist him consisted of one corporal. I am not sure what the exact regulations then

were; but I am of opinion that he had not the established right to take part in the Councils of the General Staff or to insist that he should be fully *informed in time* of places of operations so that from the technical and material point of view he could advise on the feasibility of what was contemplated.

I say "informed in time" because in regard to anything appertaining to engineering, which deals essentially with material things, time is needed for preparation and for the collection of tools, plant and stores. How necessary this may be is seldom appreciated except by those who have to devise and execute the work.

Perhaps this condition of affairs has by now been altered; but it is the subject upon which I would ask the lecturer to enlighten us.

I do this from the point of view of the Army and also from that of those to whom are entrusted the special duties under discussion.

General Baker Brown: As we have been asked to start a discussion there is one point I would like to submit for your consideration on which perhaps other officers may have something to say. We heard a good deal in the lecture about the necessity of not working in water-tight compartments, but at the beginning of his lecture General Thuillier divided the engineering work in the field into two quite definite water-tight compartments, field works and works. That is a point on which I have had a good deal of practical experience, and when I was in the Army I formed the very definite opinion that that division was at the root of a great many troubles in the field. Even right in the front line, in the division itself, the C.R.E. has a lot of "works" services. He cannot get away from them. Wherever there is no actual fighting going on, the General may come down on him for such jobs as the erection of a hut for an office or the supply of light to his quarters. He has all the sanitary services to work out in concert with the Medical Officers and he has to assure a pure water supply to the troops. I daresay these points have been considered in the new Regulations, but when I was in the Army they all came under the head of "Works." Further back in the Corps Headquarters you will find there are more works and less field works. Right at the back of the Army your field work is limited to protection against aircraft, and the greater part of the Engineer work falls wholly into the category of "works" services. My point is this—that you cannot make a hard and fast line without loss of efficiency. The Engineer Officer in our little Army has to be ready to do both things alternately—one hour at one thing and one hour at another; and the separation of the Engineers in the field under an Engineer-in-Chief and another lot under a Director of Works entails a very great loss of efficiency. The whole of the organization should be under the Engineer-in-Chief, thereby assuring an elastic organization.

Major B. T. Wilson, R.E.: I am one of those officers who is neither a junior officer nor a senior officer; but I should like to say that during the war, when serving as a junior Engineer officer, I was never quite able to understand how it was that the railways and roads, which to us appeared to be engineering services, were not controlled by the Engineers. I should like to ask the lecturer how it was that they passed more or less out of the control of the Engineers. Another remark I should like to make is that I remember, when I was a young officer at Chatham about 19 years ago, Sir Reginald Hart was very anxious to transfer the headquarters of the Engineers to Aldershot. In view of the remarks General Thuillier made in regard to the importance of not living in water-tight compartments and that the Engineers should endeavour at all times to take a soldier's view of his technical problems, I have been wondering whether that project has ever been thought of again.

LIEUT. W. M. HARRINGTON: I should like, if I may, to make a few remarks as a junior infantry officer. For several years we have heard a great deal of the importance of the attachment of the Engineers to other branches of the Army. For the past year I have been serving at Aldershot, and I have seen gunner officers attached to the infantry and Air Force officers attached to the infantry also, but only on two occasions have I seen a sapper attached to us. We were, in a Brigade of the Second Division, carrying out a most important operation. We were throwing bridges across a river with the object of attacking at dawn, and I was in charge of a reconnaissance party. I had never met the sapper officer before, and we did not get on very well. The bridge I refer to had been used on several occasions by other brigades; it was water-logged and very heavy. The men hated it; in fact we all hated it, and we were all glad to get back again to barracks. I have met a great many other sapper officers since and we have got on splendidly. On another occasion I saw, not a sapper officer, but a foreman of works. He arrived to forbid the use of some new baths which had been installed in our mess after many years of waiting!

I think it is a mistake to separate in this way, and that it would be a good thing if we saw more of the Officers of the Field Companies.

COLONEL H. L. PRITCHARD: I understand the main theme of the lecture is that Engineers in the past have perhaps done more than they ought to do in trying to conduct engineering operations, and that now it is the business (in fact it always has been the business, but it has not been done) of the Staff. That being so, I would like to draw your attention to the fact that in engineering operations you have to consider five things. You have to consider: (1) the skilled labour available; (2) the unskilled labour available; (3) the time; (4) the transport; and (5) the stores and plant. All these details have to be proportioned and co-ordinated. I think we have gone back in our establishments to 1914. If you look at our establishments you will see that the unskilled labour is completely lacking. I want to impress on the staff who have now to take up these matters that unskilled labour and transport are an ever-serious consideration and always difficult to obtain. If any of the five factors of engineering work to which I have referred are lacking, the whole thing falls to the ground. I fully agree with the lecturer's view that engineering works in war are military operations and that it is for the Staff to manage, control and co-ordinate them with the advice of the Engineer, who must keep in very close *liaison* with them, and who, I hope, will always do so. I trust, however, the Staff will realise that we have gone back to 1914 in our establishments; and in the various staff exercises now being worked out it is usually found, I think, that the questions of transport and unskilled labour are generally not provided for at all.

LIEUT.-COLONEL E. G. WACE, R.E.: There is one side of the medal which has not been referred to, and that is the difficulty (in practical politics) of actually training the Engineer officer to cooperate with others. I believe we have now got 1,000 officers in the Corps and only 12 field companies. All the rest of us are spread far and wide doing odd jobs—works or survey, or attached in India to the Public Works Department, anywhere rather than with troops. Unless the Engineer officer is going to be brought into touch regularly and systematically with other arms of the Service by attachment, as an infantry officer has just pointed out, we cannot keep in touch with the military side of our profession and we cannot be properly trained. In just the same way there are few units to which officers of other arms can be attached in order to learn what we are doing. It must also be remembered that in times of peace the work the sapper has to

do on manœuvres is very much a matter of imagination, so that it is very difficult to convey to officers in the other arms what we should really be carrying out in war.

MAJOR-GENERAL H. F. THUILLIER, C.B., C.M.G., in reply, said: Referring first of all to the question asked by General Swinton, I think I may tell him that the position of the Engineer-in-Chief and Chief Engineers in regard to the Staff and to the Army generally to-day has been laid down by recent amendments to Army Orders in a very clear manner. Whether those amendments fulfil what some officers think to be necessary is another matter. With regard particularly to the point made by him that the Engineer-in-Chief should have the right to lay his opinions before the General Staff, and if necessary before the Commander, although it is not, of course, possible to prescribe such a right in the Regulations, I cannot imagine there would be a case in which he would not possess that right. I think it will prove of interest if I read to you extracts from what the Regulations say. They provide that there shall be at the headquarters of the Army in the Field and of Army Corps senior Engineer Officers who are affiliated to the General Staff for the purpose of advising upon engineering questions. The one at G.H.Q. is the Engineer-in-Chief, and those at the Army Corps are the Chief Engineers. Their functions are also laid down. They are too long for me to read in detail, but they provide, amongst other things, that the Engineer-in-Chief shall be responsible for advising the Staff as regards the distribution and standard designs of Engineer stores, etc.[1] In other words, he has certain

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[1] *Field Service Regulations. Vol. I.*

71. Duties of the Engineer-in-Chief at G.H.Q. The duties assigned to the E.-in-C. are:—

1. As regards stores:—
   i. He will be responsible for advising the staff as regards the prediction, distribution and standard designs referred to in Sec. 67, 4 (iii).
   ii. He will act as a *liaison* officer between the general staff and the heads of services with a view to reducing the requirements of the staff *for a given period* to the possibilities of production during that period.
   iii. He will communicate direct with subordinate formations in order to procure the engineer information required from those formations to enable him to draw up the advice indicated in sub para. 1 (i) above.

2. As regards control of field engineer works:—
   i. He will advise the Staff as to the allocation of work between subordinate commands and as regards any redistribution of engineer units which may appear desirable, in order to proportion available labour in given areas to the work required in those areas.
   ii. He is especially charged with the collection and examination of all available information upon the physical features of areas in which the C.-n-C. may intend to operate which reflect on the possibilities of water supply and also upon the bridging arrangements which may be necessary.
   iii. He will prepare for the staff schemes of demolitions ready for issue in the event of a retreat being enforced on any portion of the army.
   iv. He will carry out on behalf of the staff such technical inspections as may be ordered, in order to ensure that:—
      (*a*) The field engineering works executed by subordinate formations conform to the general scheme ordered by G.H.Q.
      (*b*) Engineer units (especially engineer workshops) are being utilised in conformity with regulations and with any supplementary orders which may have been issued by the C.-in-C.

3. He may also be called on to advise the principal staff officer concerned on any other subject in connection with the work of the R.E., as, for example, the distribution of Officers.

functions very definitely laid down, and I think it is hardly conceivable that he would not be able to approach the General Staff, give his views on any operations in progress, and, if necessary, go to the Commander-in-Chief himself.

As regards General Baker Brown's remarks, I think, if I were to answer him fully, it might be necessary for me to give another lecture. A little while ago I prepared a lecture on this very question which I intended to deliver at Chatham, but, though I was prevented by ill-health from doing so, it was afterwards published in the *Royal Engineers' Journal*. Without going through it again in detail, I can only say that the proposal of General Baker Brown that all work of every description—and I think in that I may include what Major Wilson suggested about railways and other work of that kind—being under the control of the Engineer-in-Chief, is a proposal that, after full consideration, the Army Council have decided is not one that they can favour. The division of the work in the field into two classes which I mentioned, namely, works in connection with operations, and works services, is one that has been quite definitely laid down. It is, of course, true that the line of demarcation cannot be drawn accurately and the Regulations say so. It is impossible to say sometimes whether works services are to be done by the Director of Works from the rear or whether they are works in connection with operations. There is no doubt that the units among the fighting troops will very often have to carry out works which are in the nature of works services. But nevertheless that broad distinction remains and it is an integral part of the organization which the Army Council has decided to bring about. I cannot enter into an argument for and against it, but I wish to say that I am in entire agreement with the scheme as laid down by the Army Council, and that it is, in my opinion, most necessary to separate those two branches of work in the field. An officer of the infantry made some very interesting remarks suggesting that Engineer officers do not get attached to other arms in the same manner that the officers of the other arms do. I have no doubt that is quite correct, but I am sorry to hear that, even at Aldershot, where of all places we hoped that this was sometimes possible, it is not often the case. There are a number of officers from Aldershot present this afternoon, and I hope they will make a note of that when they get back. I expect the reason is that the Engineer officers at Aldershot, like those elsewhere, have a great many official activities and that the establishments are nearly always short of the number required for the work to be done, and I know it is often quite impossible to spare officers for purposes of that kind. I think I can safely state, however, that it is not because R.E. officers do not desire attachment, or because their chiefs do not wish to bring it about, but it is generally because they are unable to do so. I fully agree with the necessity for it. As regards what Colonel Pritchard said, that we had gone back to 1914 in our establishments, I do not think one can really say that we have gone back as far as all that. In 1914 there were only two companies in the establishment and now at all events there are three. The establishment for wars on a large scale is not yet settled and we do not know what it is going to be, but I do not think it is likely to be anything as small as it was in 1914. But, after all, the authorities who are responsible for dealing with the establishment, mainly the Adjutant-General's branch, are in a very difficult position. They are pressed very strongly by the Secretary of State, who is in turn pressed by the Chancellor of the Exchequer, to cut down expenses to the very bedrock bottom and to cut down the establishment as far as they possibly can. They have, therefore, to decide between providing perhaps more Engineers or, alternately, providing more guns or tanks or something else. It is impossible for them to satisfy all the arms, and I daresay very probably they satisfy none of

them. But I am sure they do their best, and, if they are obliged to keep the Engineers' establishment down to less than what we think it ought to be, it is not because they do not consider it necessary, but because they cannot raise financial sanction for the maintenance of any larger number. Colonel Wace spoke about the difficulties of training Engineer officers. Those are realised very fully indeed. I am afraid I am going to utter a horrible heresy to many officers present, but, in reply to the infantry officer who stated that when he met an Engineer for the first time he did not get on with him, I would like to say I am reminded of the fact that, if we were all brought up in one Military College, when we met later on in life for the first time under the circumstances described we should not have a tendency to look upon each other as a sort of strange animal whose habits and customs one does not understand. We should not have that sort of feeling if we were all brought up together. I wish that the establishment were sufficient to admit of Engineer officers being given very much more military training than they get, both by being attached to other arms much more often than they are at present, and in other ways; but with the very limited establishment now in existence I do not think it is possible to do so. But I can assure Colonel Wace that it is very well understood at the War Office that when opportunities occur—they may not be very often—it should be done.

I think I have now answered shortly the various remarks that were made.

THE CHAIRMAN (Lieut.-General Sir G. M. W. Macdonogh, G.B.E., K.C.B., K.C.M.G.): Ladies and Gentlemen, it now remains for me to make a few remarks on the lecture and ensuing discussion. To begin with, I should like to thank General Thuillier for his most interesting lecture as well as all those officers who have spoken. General Baker Brown raised the question of the separation between the work of the Engineer-in-Chief and that of the Director of Works. His remarks have been answered, nevertheless, by General Thuillier. I think it may be of interest to state that exactly the same system was followed in the German Army. Thus, at the beginning of the War there was a General of Engineers and Pioneer Corps at General Headquarters, whose position it was to act as the adviser of the Chief of the General Staff in all technical pioneer matters. Behind the front there was an Officer of the Construction Corps, the Works Corps, who was responsible for similar services to those that our Director of Works carried out. A large number of changes were made in the German Army in the course of the War, just as occurred in our own Army. On the 1st September, 1918, an Army Order was issued under which the General of Engineers and Pioneer Corps became General of Pioneers with the Chief of the General Staff of the Field Army. There was a Pioneer General with each Army, who was not a Commander of Pioneer Troops but the Adviser of the G.O.C. on all matters connected with his arm. He reported to the G.O.C. through the Chief of the General Staff. His tasks were the following:—

(i) to participate in the preparation and investigation of operations in regard to pioneer matters;

(ii) to elaborate schemes for the employment of pioneer formations;

(iii) to supervise the technical improvement of all positions and fighting zones;

(iv) to direct all technical pioneer proceedings and questions of material, as well as schemes for the carrying out of various experiments;

(v) to conduct the provision of close fighting material, pioneer stores, trench mortars and their munitions, as well as building materials for the construction of positions, in conjunction with the Chief of the General Staff;

(vi) to conduct the construction of rear positions and fighting zones, for which

purpose the Construction Staff, Army troops, were placed immediately under him;

(vii) to inspect the Pioneer Field Recruit Depôt and the Army Trench Mortar School.

The chief point which I think General Thuillier wished to make in his lecture is the imperative need of co-operation. Secondly, he wishes us to appreciate the gigantic advances made in recent years in applied engineering; also the corresponding and urgent necessity that the General Staff should realise what a very potent weapon they possess in engineering science and should learn how best to employ it. I would add that, in addition, it has to be remembered that the basic factor in war as well as in peace is the man and not the machine. What we have to do in war is to apply engineering to the needs of the troops and not to apply the troops to the needs of engineering. I think the best method to bring this result about is to make sure that the Engineer-in-Chief and the Chief Engineers of Armies and Corps should be not merely highly skilled engineers, but also highly skilled soldiers. It should be, in fact, the duty of every Corps to provide in its higher ranks officers possessing these qualifications. I am most anxious that there should be no misunderstanding of my meaning, and wish to emphasise the fact once more that the Royal Engineer officer must be a first-class engineer and at the same time a first-class soldier. We can draw any number of first-class engineers from civil life, but where they fail in the field is in their lack of knowledge of military matters. It is for the regular sapper to supply this knowledge, he himself having such combined qualifications as will make him gain the confidence both of the staff and of the engineering profession.

There can be no cast iron rule as to how R.E. officers are to obtain and keep their military knowledge. I have known some, who played a very distinguished *rôle* in the War, who had been in the habit, in peace time, of attending at their own expense and in their own time all manœuvres and military exercises they were able to reach. I remember one well-known sapper, now long dead, telling me that, whenever he heard of an infantry battalion in training in his neighbourhood, he always went down to the station to witness the operation, and that he always learnt something from it. That is the right spirit. To the ordinary man, however, the easiest course is to take the Staff College certificate, for that is an outward and visible sign that he has acquired a knowledge of the other arms and of the rudiments of warfare. He will there meet officers from every branch of the Service and will gain the feeling that he is a unit of the British Army and not merely member of a particular corps. If he next takes up staff employment, alternating with corps work, he will not merely learn how the Staff think and work, but he is certain, by the time he reaches the higher ranks, to know personally all the chief general and staff officers of the Army. This personal touch is of inestimable value, for more is done by its means than by any other.

General Thuillier has read some extracts from the new Field Service Regulations. I have not had an opportunity of studying them, so I will confine myself to pointing out that, however excellent they be, it is the spirit in which they are carried out that matters; the result will, therefore, depend upon the efficiency of those who follow them.

General Swinton has drawn attention to a very important point, namely, the value of personality. It is probably the most valuable quality that anyone can possess. If the Engineer-in-Chief has sufficient of it to impress himself on the Commander-in-Chief and his three great Staff officers it is certain that the engineering aspect of all military problems will receive due consideration.

Field Service Regulations cannot deal with the human element, otherwise I should like them to require that the Engineer-in-Chief should dine and drink a glass of port with his Chief of Staff as frequently as possible. If he does that and maintains intimate personal relations with his General and with the Staff, you may be certain he will always know what is going on and will be able to prepare for it. General Thuillier has quoted to us the example of Kut, but I feel sure that General Townshend cannot have been in the habit of drinking his postprandial port with Major Sandes, otherwise he must have known all about the state of his bridging train.

I would again wish to impress upon you the importance to an Engineer officer of possessing a Staff College certificate. I am glad to see from the Army List that many more sappers have p.s.c. after their name now than used to be the case, and I hope this will continue. I know the small number of vacancies open to the Corps, but perhaps some day the accommodation may be increased, for I feel sure that it would be all to the advantage of the Service if it could be arranged that every officer, of whatever branch, who is likely to make a good Staff officer should be given the Staff College training. Every encouragement should be given, by selection or otherwise, to the best young R.E. officers to go to Camberley and Quetta, and those for whom vacancies cannot be found should be given every opportunity of attending manœuvres, training, and other such exercises, thereby keeping themselves thoroughly up to date in military affairs. But this must be done with due regard to their technical work. The higher engineer posts in the field must be filled by men who inspire the Staff with the confidence both in their military and technical qualifications; if they do that, we shall hear no more of engineering science being neglected and of the R.E. not being consulted in those matters which are within their province. That, gentlemen, is the real solution of the problem put before us by the lecturer, namely that the Corps should always have ready to fill the high engineering posts in the field, men of strong personality, supported by sound technical knowledge and wide military experience.

I should certainly like to endorse what General Thuillier has said in regard to the advantages which would accrue from the amalgamation of Woolwich and Sandhurst. That has been discussed for I do not know how many years—the last 40 or 50 years at least I should think—and it was actually discussed when I was Adjutant-General. Most of these questions, however, are usually settled by financial considerations and the suggestion has never materialised. I do not think there can be any doubt that if the R.E., the R.A., the Cavalry and the Infantry were all trained together as boys there would be far fewer watertight compartments in the Army than there are at present, because we all know that boyish friendships are always maintained, and that if you have known a man at the Shop or at Sandhurst you continue to know him for the rest of your life.

Major Wilson referred to the proposal which was made when he was a young officer at Chatham to move the S.M.E. to Aldershot. I happened to be Brigade-Major at Chatham when that proposal was made. My recollection is that it was started by General Fraser when Commandant S.M.E. There was a long correspondence between him and Sir Charles Warren, who was commanding the Thames District at the time, about the matter. Sir Charles Warren went out to South Africa; General Fraser took command of the district; he was succeeded by General Hart, and eventually the proposal was turned down for various reasons, one of which was that Chatham, being on the Medway, offered facilities for instruction in bridging not possessed by any other military station. I think General Smith Rewse will bear me out in saying (because he was at the S.M.E. as Assistant Commandant at the time) that there was then a proposal to send

young officers to Aldershot and attach them to field units immediately after they left the Shop and before they went through their engineering course at Chatham. The idea was to enable every young engineer officer to get some knowledge of the Army before he went out to engineering duties. It was felt then that there were a good many officers who got locked up, either in coast fortresses or in India, and who never saw anything of the Army at all; and it was, therefore, suggested that they should have at least a year at Aldershot, where they would see the rest of the Army, before they continued their engineering studies. That proposal was not approved, principally owing to financial conditions.

Gentlemen, I will not detain you longer, but, in conclusion, ask you to pass a very hearty vote of thanks to General Thuillier for his very interesting and able lecture.

The resolution of thanks was carried out by acclamation.

GENERAL SIR GEORGE MILNE, G.C.M.G., K.C.B., D.S.O., A.D.C.: Ladies and Gentlemen, Before the meeting breaks up, I would ask you to pass a hearty vote of thanks to the Chairman, and would also like to add how cordially I agree with every word he said on the conclusion of the lecture. One of the most difficult questions facing us at the present moment is the military education of the Royal Engineer officer. I see a very large number of Royal Engineer officers here to-day, and I came to the meeting hoping that I should hear some opinions, especially from the more junior officers, as to how the problem might best be solved. Much is being said to-day about the attachment of R.E. officers to the other branches of the Army. I think General Thuillier will agree with me that our great difficulty, whenever we endeavour to attach R.E. officers to any other branch, is that they cannot be spared from their immediate duties of barrack construction and work of that description. That is the curse of the system as it exists at the present moment. But, I think, a lot can be done in that direction; and I was very interested indeed to hear the suggestion made by the Chairman that, in the early days of their service, these young R.E. officers should be attached to other branches before they disappear into purely R.E. work. Strangely enough, even in the bad old days there were more senior R.E. officers in military commands than there are now. That is an extraordinary result of the War, and I think it is a subject well worthy of consideration, more especially in view of the remark made by the lecturer that we need some system which will secure for all officers a training which will make them look at military problems with the eyes of a soldier. But, gentlemen, I think you will agree with me that, whatever the system is, we have the ideal in our Chairman. Sir George Macdonogh began life apparently under the disadvantages from which R.E. officers have suffered; but, somehow or other he overcame them and, in spite of them, he became Director of Intelligence in the greatest war the British Army has ever known, and subsequently Adjutant-General of the Forces. It is up to all Engineer officers to overcome their difficulties in the same manner. I now ask you, gentlemen, to pass a most hearty vote of thanks to Sir George Macdonogh for his kindness in taking the Chair this afternoon.

The resolution of thanks was carried by acclamation.

THE CHAIRMAN: Ladies and Gentlemen, I thank Sir George Milne very much indeed for the very kind remarks he has made in proposing the resolution of thanks to me for presiding at this lecture, and you, ladies and gentlemen, for the way in which you received them.

The meeting then terminated.

THE PSYCHOLOGY OF NAPOLEON.

By BRIGADIER-GENERAL C. N. WATTS.

I

THE career of Napoleon generally, and his conduct of the Waterloo Campaign in particular, may appear to be subjects about which little fresh can be written. Nevertheless, in a book published in 1915, "La Solution des Énigmes de Waterloo," by E. Lenient (Librairie Plon, 8 Rue Garancière, Paris) is to be found a fascinating study of Napoleon's psychology, as well as that of the French Marshals and Generals, and of the opposing Generals, engaged in the Waterloo Campaign, together with an appreciation of the moral and physical values of the contending Armies. The book is so suggestive as to the causes of failure in the case of the Great Master of War as to be well worthy of study even at the present day.

The list of authorities used by the Author is exhaustive, and he marshals the opposite views of Napoleon's bitterest critics as well as those of his unswerving admirers with great clarity.

So he shows how Thiers ("Histoire de l'Empire") ascribes to "fatality" the crushing defeat at Waterloo of 125,000 men led by the Emperor in person; how Charras ("Histoire de la Campagne de 1815"), animated by personal hatred of Napoleon, fails to grasp his mentality and does not appreciate either the decisive reasons for his actions or the deep seated cause of his errors, ascribing them all to ill-health; how Jomini ("Précis de la Campagne de 1815"), some time Chief of Staff to Marshal Ney, handicapped by his personal associations and recollections, was chiefly concerned with preserving in his criticisms a just balance between Ney and Napoleon; how Jomini, after beginning with unstinted admiration, but without sifting the original reasons for the movements or studying the initial orders as soon as the ill-success of the plan becomes apparent, hesitates, ceases to admire, hints at other plans and is guided in his arguments by the sequence of events. He also shows that Clausewitz ("La Campagne de 1815 en France—Traduction Niessel") is "dominated by preconceived ideas . . . and carried away by the principle of vigorously attacking an enemy, no matter what the conditions or nature of the country may be in which he is to be encountered." Further, that he is obsessed by his consuming desire to effect the education and training of his Prussian comrades in the system of shock action. Clausewitz thus concludes his criticisms by distorting Napoleon's plan of campaign, and arrives at a false conclusion in that "he represents the Emperor as a desperate gambler who no longer calculates his chances."

The author next dismisses the explanation advanced by Houssaye (" 1815—Waterloo ") of the culminating point of the campaign—the decisive 16th June—the famous march, and countermarch of D'Erlon—that Napoleon was " disconcerted to the point of confusion "—" that he was incapable of preserving his presence of mind "—" that he was lacking in foresight and reflection." None of these suppositions, so it is claimed, can clear up the most involved and obscure of the enigmas of Waterloo; for it is inconceivable that the Commander of the Army of Italy who kept his head when Lusignan was threatening his position from the rear of the Plateau of Rivoli; the First Consul, who, imperturbable during the four-hour crisis at Marengo, finally snatched victory with shattering energy on the arrival of Desaix; the glorious victor of Austerlitz who, deliberately, laid bare his line of retreat to draw the enemy into a trap; the Napoleon of Eylau, calmly contemplating the Russian masses hurling themselves in bayonet assaults on the village; the unmoved warrior of Leipzig directing with absolute calmness one of the greatest battles in history; the leader who for twenty years brought about and contemplated without trace of emotion the most costly tragedies, the most audacious assaults, the greatest triumphs, as well as heart-rending disasters;—it is incredible that such a man should become panic-stricken and lose his grasp of the situation and his reasoning powers.

With equal emphasis he dismisses the theory of Malo (" Champs de Bataille de l'Armée française ") that Napoleon had lost confidence in himself and also " faith in his success," with the result that incomplete and relatively slovenly preparations were made; that, after the opening of the campaigns there were " hesitations, delays, pauses," only to be explained by the fact that he was secretly convinced of the futility of his finest combinations and their ineffectiveness to extract him from a hopeless situation. In disproof of this theory the author again quotes Houssaye, who records that on 18th June, on the battlefield of Waterloo, at the commencement of the action, Marshal Soult impressed on Napoleon the necessity of prudence and that the latter retorted, " Wellington is an inferior General—the English are bad troops—this (battle) will be *l'affaire d'un déjeûner*," a speech revealing the most absolute optimism and not the cry of anguish of a despairing man, as M. Lenient remarks. Not only did Napoleon leave the Tuileries on 12th June certain of victory, but he had not lost hopes of it even at seven o'clock on the evening of the 18th when disaster was certain.

Just as the theory of Thiers was strongly opposed by Charras, so also was that of Houssaye combatted by Grouard (" Critique de la Campagne de 1815 "), who found the solution of the problem in the state of Napoleon's health. Yet one cannot accept as the explanation of the Emperor's defeat at Waterloo the opinion that he had prematurely aged and was ill, any more than that he had lost his nerve.

The views of Colonel Camon (" Précis de la Guerre Napoléonienne—Batailles ") that all the failures of Napoleon from 1796 to 1815, even in

Russia, 1813 and 1814, were due to the mistakes of his Generals, though temptingly simple in accounting for the culminating failure at Waterloo, are quite impossible to adopt. Camon unflinchingly avoids all criticism of the Emperor, and makes scapegoats of all his generals, particularly in dealing with the Waterloo Campaign, during which, according to Camon, all the French leaders seem "to have lost their heads." Neither Ney, Grouchy, Reille, Drouet, d'Erlon, Vandamme, Gérard, or Lobau are exempted. As a matter of fact, who was in supreme command? The Emperor. So, if one follows Camon, a Commander-in-Chief is the only authority never to be held responsible for the defeat of an Army.

Neither does the legend of treason solve the problem of 1815. It is possible that the (French) troops, decimated, exhausted by a day of desperate and sterile efforts, demoralised by defeat, and overwhelmed by the enemy's pursuit, may have raised the cry of treason; but treason does not supply the key to the enigma.

The only manner, in the opinion of M. Lenient, to dissipate the fog of Waterloo is to "study thoroughly the original causes which led up to Napoleon's conduct of the campaign, since, just as it is impossible to account for movements in war without comprehending the preparatory measures taken to bring them about, or to understand the manœuvres of an army without knowing all about its recruitment, constitution and moral and physical values, so also can the actions of a Commander-in-Chief of forty-six years of age not be understood without a study of his anterior psychology." To analyse and throw light on the decisions of Napoleon in 1815 it is necessary, first of all, to take into account the successive evolutions of his strategic outlook To understand a man, however great a genius he may be, one must delve down into his very essence, his nature, and into the diverse manifestations of his life.

II.

In Chapter III., Lenient traces the gradual changes in Napoleon's mentality from 1796 onwards. In 1815, the power and breadth of his strategic genius, his will power, and his activity remained unimpaired. In this regard there was no alteration for the worse, no weakening. But other intellectual and moral factors influenced the conduct of War. Waterloo was the last act of the Drama, and to understand it, one must study the psychology of the Emperor and the successive evolutions of his strategic conceptions, brought about, it may be, by changes in his character, or by modifications of his judgment.

To start with 1796: ideal perfection is the only term to apply to this campaign. General Bonaparte makes his *début*. Burning with genius, but with no real victory to his credit, he is not yet fully conscious of his own powers, and no cloud of pride obscures his clearness of vision. He adopts a positive strategy, at once bold and prudent, luminous and profound. He disposes of his reserves with wonderful skill, detaching them to the critical point with unerring certainty and recalling them when

the time arrives for the decisive blow. He takes everything into account in forming his plans: climate, the nature of the country, the character of the enemy, the intelligence received. He thinks out his decisions, issues orders suitable to the object he has in view, does not shroud himself in a reserve of mystery and pride, but explained clearly to his subordinates his own general intentions and the purport of each particular movement. At this period, Bonaparte had full confidence in his generals, while they, on their part, were always ready to think for themselves; and to act, if necessary, on their own initiative. To all this, in the language of the cookery book, add the heroism of the soldiers and you obtain an ideal army, that is, an army possessing complete cohesion between its component parts. The most astonishing psychological characteristic of the campaign of 1796 is the suppleness of Bonaparte's genius, the prodigious facility with which that genius unfolded and adapted itself to every form of manœuvring.

In 1800 a completely different picture is presented. No longer the budding General but the First Consul, crowned with the laurels of Italy and of Egypt and invested with supreme power, takes the field. The mob prostrates itself before him. The habit of giving despotic orders is readily acquired when backed by an inflexible will. Scarcely had he entered Italy than the First Consul ceased to pay any further attention either to the intelligence received about the enemy or even to the enemy himself. Since the end of May a splendid opportunity had presented itself to him of crushing Mélas and the bulk of the opposing forces, still the First Consul throws away his chance and sacrifices it for a triumphal entry into Milan. Pride and political considerations had overriden strategy. Without pinning the enemy down to any fixed position he dreamed of outmanœuvring and surrounding him. Preconceived ideas, with nothing positive to justify them, succeeded each other in his mind, the first is that Mélas will attack him; next, two days before Marengo, he is haunted by the conviction that Mélas is only thinking of retreat and will not fight. Convinced that the latter will extricate himself by a flank march either northward or southward, Napoleon detaches from the army at 9 a.m. on the morning of 14th June, at the very moment when the Austrians were attacking his outposts, Lapoype's Division to Valenza, and Boudet's Division, under the orders of Desaix, towards Novi. His Army was consequently dispersed in such fashion that he had only about 20,000 men left, out of 58,000, to oppose the enemy. At 4 p.m. the movement crumpled up and, even after the arrival of Desaix, the victory was so indecisive that at the end of the day the First Consul was compelled, in order to repair some of his mistakes, to recall Duhesme and Loison. Thus, in 1800, a modification of the admirable strategy of 1796 becomes apparent; this was brought about by uncontrolled imagination and pride, due to the possession of absolute power. The First Consul ceases to develop and to perfect the fruitful principles of the Revolution, of Carnot and of the Generals of the Republic; he reverts to the retrograde procedure of the eighteenth century: demon-

strations, splitting up of forces, blockades, containing movements. Lenient thus considers that the initial exercise of absolute power had adversely affected the mental capacity of the First Consul, but that, fortunately for himself, he was to regain it, as the records of 1805–1806–1807 can testify.

During this, the triumphal, period, the Emperor led the best Army that he ever had at his disposal; this was the army of the Camp of Boulogne. He soon imposed his will on his enemies either by the crushing pressure of massed forces as at Ulm, or by the most perfectly combined movements, as at Austerlitz, Jena and Friedland. The characteristic of this period is the profound change taking place in Napoleon's mentality. In considering his real object and his consequent plan of movement, the Emperor gradually was acquiring the habit of withdrawing behind an impenetrable reserve, a deliberate product of machiavellian mystery and of distrust. In support of this conclusion Lenient quotes General Bonnal (" De Rosbach à Ulm ") :—" One man alone ponders, foresees, issues orders, namely, Napoleon." " In the Grand Army, except perhaps on the eve of a battle, no order by the Emperor was forwarded intact to the Marshals . . . it was cut up into sections and those concerned only received a copy of that part of the order which specially affected each one of them." " Napoleon in centralising all powers in himself had killed the spirit of initiative and the qualities of reflection and judgment so necessary for Commanders of greater formations . . . ." with the result that there was " . . . absolute ignorance of the situation of (other) troops, of the orders for the general movements, of reports received, and a lack of maps." Only the Emperor knows what it is he wants. He, himself, is his real Chief of the Staff and Director of Supplies. Berthier is only head of the distributing agency, simply a Secretary and passive executive officer. Acting on definite instructions to so do, Berthier cuts up the orders issued by the Emperor, and sends separate copies of them to the Commanders of the Army Corps—orders having no connection with, or bearing on, each other. General Bonnal, in his " Life of Marshal Ney," gives striking examples of some of the formal orders issued by the Emperor and transmitted by Berthier : " You are not to move without the order of the Emperor." " Everything depends on general combined movements; therefore no Army Corps is to act independently." " No one knows what is in the mind of the Emperor, and your duty is to obey." " The Emperor is immovable in his plans."

It is easy to realise the lamentable effects that such a method is bound to produce in the long run. With the exception of men of the quality of Davout, Masséna and Ney, every one must end by awaiting a formal definite order and carrying it out to the very letter.

Ulm came as a repetition of Marengo. It wanted but a very little to bring the movements to failure. In 1800 the First Consul imagined that the enemy wanted to escape. As he recognised that he was mistaken at Marengo, so in 1805 he abandoned himself to the preconceived

idea, in an opposite sense this time, that Mack would offer battle. In consequence, Murat was ordered to concentrate the Fifth Corps (Lannès) and the Sixth Corps (Ney). As Ney was astride of the Danube, Murat (urged by the Emperor) sought to bring him over to the right bank, but Ney, endowed with a very acute and just perception, saw the mistake and opposed the order, whereupon Murat repeated and emphasised it. Very fortunately Ney had kept, till the last minute, Dupont on the left bank; so when, forced to obey, he conformed to Murat's orders, the combat at Haslack had commenced and Dupont by his audacity had saved the situation at Ulm.

The power of the Emperor's imagination became so great that he was led away by it every time a secondary objective tempted him. Thus it happened at Dürrenstein when the French Army was marching from Ulm to Vienna on the right bank of the Danube, and even more strikingly at Kreuzburg, two days before the battle of Eylau.

Here, again, the Emperor had several objectives in mind. Everything indicated to him the proximity of a decisive battle with the Russians, which was the essential, dominating end in view. This seemed to demand a general concentration; but he had dreams of capturing a Prussian Column retreating under Lestocq. Consequently, on the 6th February, he sent two orders to Ney, both precise and absolute. The first, dated 4 a.m., 6th February, directed Ney to capture the Prussian force; while the second, issued at 10 a.m. on the same date, ordered him to march with his Corps on Kreuzburg. Now Kreuzburg lies in another direction, six leagues from Eylau, so that, once more, it was a case of a secondary being superimposed on the principal objective. In spite of Ney's utmost efforts Lestocq escaped and reached the battlefield of Eylau. As for Ney, at nightfall he was still at Althof, prolonging the left flank of the French Army, and took no part in the battle at Eylau. Although an order to rejoin had been sent to him, he did not receive it till 2 p.m. and at 3 p.m. the battle was going so badly that Napoleon was actually thinking of retreat. Camon (" La Guerre Napoléonienne—les Batailles ") points out that the greatest mistake committed at Eylau was the false estimate by Napoleon of the *morale* of the Prussians, another way of drawing attention to the incredible contempt of the Emperor for all enemy generals and armies—a mistake due to pride.

From 1809 onwards the Emperor became more reserved and mysterious. It is easy at the present day, having full access to all documents, including the complete orders issued, Napoleon's correspondence, and to Staff Diaries, to grasp his real conceptions, and to wonder at the incredible misunderstandings and disastrous lack of cohesion; but the important matter is to ascertain what emasculated portions of these orders his subordinates received. This is not only a question of defective organisation of the Headquarter Staff, since, if Berthier cut up the order into sections, this was done because Napoleon desired to keep to himself the secret of the plan of operations and the general

conduct of the movements. The natural result was that, except on rare occasions, the subordinate generals awaited special and precise orders. Unbounded pride and distrust were the causes of these defective staff methods, while a multiplicity of objectives attracted and led astray the great brain. Napoleon no longer accepted any advice that differed from his personal ideas, not even that of Davout, the only General whom, in 1809, he still esteemed. So when Davout saw through the object of the Austrian movement and the plans of the Archduke Charles, Napoleon, dominated by preconceived conclusions, rejected his opinion, with the result that the action at Landshut completely failed to effect the main object in view—the total destruction of the hostile forces—and everything had to be done again at Essling and Wagram. Is not this a "perversion of the military sense" and a sign of "decadence," as stigmatised by General Bonnal?

At Wagram a still more mysterious problem connected with the mentality of the Emperor presents itself. Here we have a battle which he had thought out and prepared many weeks in advance. It is the stunning blow which should crush Austria; yet when he had brought it about, and—what is more—had every prospect of victory, he ceased to issue any orders and shut himself up in his tent at 3.30 p.m. And this took place at the beginning of July, when night does not fall till 9 p.m. None the less, at about 5 p.m., he was astonished to hear sustained firing! At this hour, in July, the army bivouacked!—Napoleon sending to Macdonald, who had led the great central attack, to inquire why firing still continued!

Not one of the accounts of the battle throw light on the happenings on that evening. Illness cannot be accepted as an explanation, for Napoleon had been seen by the whole Army, and was not ill.

From 1809 to 1813 his psychological defects are more and more emphasised and he gradually grew inaccessible. Berthier stated how, on the battlefield of Leipzig, no one gave a word of advice to the Emperor. Obstinacy, domination of preconceived ideas, and uncontrolled pride had reached their utmost limits. At the end of 1809, Admiral Decrès, one of his most sincere and devoted followers, had declared of the Emperor: "He is mad, absolutely mad; he will cast us all aside and all this will end in a frightful catastrophe." But Napoleon was not mad; his mental powers were so prodigious that he kept, to the end of his life, a complete consciousness of all his acts. It is, however, evident that the unnatural strain of his intellectual efforts and their multiplicity altered, little by little, his clearness of vision. He could no longer distinguish between a Davout and an Eugène Beauharnais, to the latter of whom, in 1813, he entrusted his Army, while restricting Davout to the insignificant *rôle* of Garrison Commandant at Hamburg, a sort of I. of C. charged with the superintendence of supplies, instead of placing him in command of an Army.

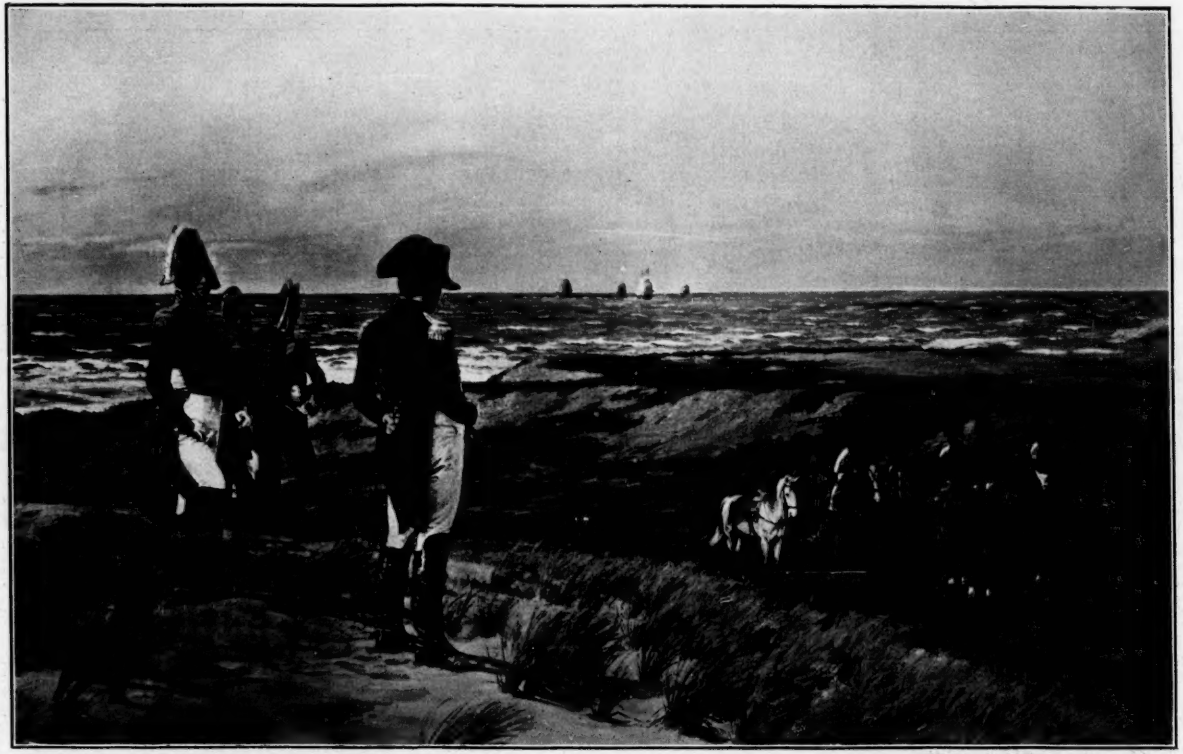
Henceforth the principles of war also weighed as little with him as did individuals. For the movements on Berlin, his geographical

objective, he ordered, in so far as it concerned Oudinot, a concentration of the Army under the guns of the enemy; while Ney was directed to make a very dangerous flank march without adequate cavalry for its cover, and then to effect a junction with Napoleon at a spot which the latter did not march to—he! the great strategist and a veritable master of war. The gravest symptoms of decadence became apparent; hastily formed plans and changes of mind impossible to anticipate. "Order, counter order, disorder" is a saying among soldiers, and this incoherence clearly explains the disaster at Kulm, and also the first day of the Battle of Leipzig. The explanation of this deterioration is that, for Napoleon, only Napoleon existed. Considerations of time and space, appreciation of the enemy, of the limit of human endurance, all possibilities, reflection and wisdom, had been swallowed up by, and had disappeared in, the absorption of immutable ideas, in the abyss of limitless pride. He cannot even avoid the supreme danger, the encirclement which squeezes a defeated enemy like a wet rag.

On the morning of Leipzig, giving his usual attention to matters of detail, he alloted to Marmont the use of three bridges over the Partha, and only reserved for his own passage across the river the bridge at Lindenau, which is an interminable defile. The battlefield of Leipzig had been selected by him, alone, after much consideration. Yet, when he arrived there, brought to a standstill with 170,000 men by broad rivers and marshes, he allowed himself to be surrounded by 350,000 Allies, without giving a single order for securing his line of retreat. The second and third days of Leipzig are inexplicable for the historian who claims infallibility for Napoleon. To understand them, intellectual and moral factors must be taken into account. Napoleon had become incapable of realising that an enemy may dare to make a serious attack where he, personally, was in command, or that there existed any possibility of defeat. The only explanation of this disaster is that it was brought about by pride.

The events of 1814, from the point of view of Napoleon's mentality during that year, can only show that his activity and genius had not deteriorated. The brilliance displayed at Champaubert and at Montmirail light up a sad period.

Finally, in 1815—from the 20th March to 12th June—there came another fantastic mental phase—the Emperor regains his wisdom and his powers appeared to be renewed. Whatever the opinion of Charras may be, Napoleon's sincerity is evident. He conversed, discussed matters, accepted advice, and won over his opponents. His exceptional intellectual powers were as fresh and unimpaired as they had been on the eve of the battle of Rivoli. From the 12th June onwards, it is permissible to look for the reappearance of Napoleon in any one of his many *rôles*—as the active alert commander of Montenotte and of Lodi, the ideal strategist of Jena and Friedland, the mysterious autocrat of Wagram, the visionary of Vilna and of Moscow, the incredible optimist of 1813, or the fierce fighter of Montmirail. There are flashes of them all.



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1805.—THE BARRIER.

"Masters of the Channel for six hours, we are masters of the world."—*Napoleon.*

FROM THE PICTURE "BRITAIN'S WATCH-DOGS,"
BY W. B. WOLLEN, R.I.

1918.—THE BOND.

French Military and British Naval Representatives outside the train where the Armistice was signed, 7.15 a.m., 11th November, 1918.

REAR-ADMIRAL G. P. W. HOPE — ADMIRAL SIR ROSSLYN WEMYSS — CAPTAIN J. P. R MARRIOTT, R.N.

GENERAL WEYGAND — MARSHAL FOCH

(From a photograph kindly lent by General Weygand, through the French Military Attaché, 1925.)

PROMOTION BY MERIT IN THE ARMY.

By LIEUTENANT R. D. FOSTER, R.A.

" In a system of promotion by seniority neither care nor judgment need be exercised, and the fitness of an officer for his position is, in the main, left to chance. . . . An officer thus arrives at the highest position in a regiment, not in consequence of his qualifications, but simply in consequence of his place on the regimental list, frequently in the face of known disqualifications for such a position. This is the rule, and it is very rarely departed from. I would ask Your Lordship [i.e. *Lord Hartington, Secretary of State for War*] *what would be the condition of any other of the great professions if the higher posts were filled upon similar principles."*

" Wolseley sustained his chant that merit, and merit only, should be the passport for preferment: the work, he urged, must be entrusted to the best workmen available; the quality—not the length—of his service must be the test of an officer, and this above all when there was any question of command in the field. . . .

" In a tone of entreaty he writes to the War Minister: 'Will you lift us out of the slough of Seniority Promotion? You can easily do so, and the Army—all that is best in it—will bless you. . . . The young school want to make the Army a real profession, in which the best men, made by their own exertions, rise to the top, as do lawyers, doctors, civil engineers, etc.'"

" The first thing is to obtain the fullest and frankest confidential reports upon all officers."—(Extracts from "The Life of Lord Wolseley," by Major-General Sir F. Maurice and Sir George Arthur.)

1. THE PRESENT SYSTEM OF PROMOTION.

THE question of promotion by merit is one of acute interest, not only to prospective candidates for promotion and Staff College examinations, but also to the large number of junior officers who cannot but regard their future prospects with a certain amount of dismay and, therefore, live on in hopes of either another war or a recurrence of the Black Plague. Among all such the possibility of accelerated promotion by professional merit would go a long way to remove that depressing feeling of "dead men's shoes," which is so apt to obscure the vision of the Field-Marshal's *bâton*, and is, in consequence, detrimental to the career of the ambitious officer. Thus the belief arises that the "inevitable peace-time block in promotion" is, in fact, inevitable; a belief which is certainly not dispelled by the study, in the "Army List," of the quadrennial batches of majors promoted to lieutenant-colonel, supplemented by a little mental arithmetic. So the conviction has grown that the introduction of a practical system of promotion by merit would relieve this so-called peace-time block, and many a junior officer has evolved some system whereby he thinks that a remedy could be found. It is known, of course, that a Committee, under the Chairmanship of Field-Marshal Lord Plumer, sat at the War Office during the latter

part of last year to consider the question of promotion of officers in the Army, but whatever conclusion or conclusions this Committee reached may be, they have not yet been made public. This fact does not raise the hopes of those who trusted that it would bear early fruit.

Before discussing any form of promotion by merit, it is as well to begin by reviewing the system of promotion at present in operation. In the normal course of events, a junior officer passes his practical and written examinations, and, in due course of time, is promoted by virtue of his seniority. A few—a negligible minority—are given accelerated promotion, because, in their annual confidential reports, they are recorded as being of outstanding and superior ability as compared to those with whom they are serving. There is no definite standard of such accelerated promotion, the standard by which these lucky officers are judged being purely local. In addition, a certain amount of brevet promotion is granted, but such distinction does not permanently affect the relative position as regards seniority of the recipient and affects only officers of some standing and of known achievements. There exists, in short, a theoretical scheme of accelerated promotion, of which the practical effect is limited out of all proportion to the desired standard; in the Royal Artillery and in the Royal Engineers it is in effect non-existent.

2. The Advantages of Promotion by Merit.

Promotion by merit would achieve three great advantages:

(*a*) Attract the right type of candidates for Army commissions;
(*b*) Stimulate the professional efficiency of serving officers;
(*c*) Alleviate any block in promotion during peace-time.

(*a*) *Attraction of the right type of candidates for commissions.*—By the "right type" of candidate is meant, not only the public and private school boy entering the Army through Woolwich and Sandhurst, but also University graduates and others who, although above the normal average age for a first commission in the Army, would still consider the adoption of the military profession as a sound proposition, *i.e.*, a career offering full scope and reward for professional efficiency.

The problem of the shortage of candidates for Regular commissions had become so acute in 1923 that Lord Haldane was asked to convene a committee to put forward a solution to the problem. The causes of this shortage were well known. They originated chiefly out of the prevailing uncertainty as to the length and possibilities of a career in the Army: so parents withheld their sons from entering such a profession. The report of the Haldane Committee, in conjunction with the official assurance that "axing" on a wholesale scale had ceased, has gone far to restore the flow of candidates to meet present requirements.

The following extract from the Haldane report is of great interest:

> "It is much to be desired that first-rate brains should be attracted into the Army . . . . and there must be real opportunities for advancement by merit."

As a direct result, the field from which candidates are drawn has been considerably widened during the past year, and at present there is an annual allotment of two hundred Regular commissions to candidates from the Universities, Territorial Army and Supplementary Reserve. Although the response to this measure has so far not been altogether satisfactory, there can be but little doubt that the introduction of a definite system of promotion by merit would, in the end, attract the required number and type of candidates from those sources which contain every promise of a fruitful supply.

(*b*) *Stimulus to the professional efficiency of serving officers.*—With the possibility of accelerated advancement within the reach of every officer, it could not be denied that a large majority would be induced to study their profession with even greater energy than is the case at present.

The Haldane Report is again illuminating on this point:

> "In practice there is very little promotion by selection in the Army. In the junior ranks it does not exist. While realising the difficulties involved in the practical working of a system of promotion by merit, we feel very strongly that such a system is essential if the officer corps of the Army is to be prevented from stagnating in peace-time and is to attract talent.
>
> "We suggest that the most practical way of dealing with this question is to insist that in every grade officers should be promoted in batches, the majority by seniority tempered by the rejection of the unfit, the minority by pure selection from those recommended for accelerated promotion."

(*c*) *Alleviation of any block in promotion during peace-time.*—In no critical spirit it may be stated that there exists no need for any repetition of the large scale upon which officers were recently compulsorily retired. Any effective system of promotion by merit would automatically sort out those fit from the unfit for advancement.

3. The Main Difficulties of such a Scheme.

These, although they can be briefly stated, are very real and not easily surmounted. They are:—

(*a*) The assessment of an officer's qualifications according to a definite standard; and

(*b*) The elimination of any suspicion of favouritism.

(*a*) The ideal would be attained if it were possible to express an officer's "total ability" as a percentage of the standard—100 per cent.

Unfortunately, the human being is not a mechanical machine whose efficiency can be accurately measured. Nevertheless, though the ideal is admittedly high, it should still be capable of attainment.

(*b*) The eradication of any semblance of favouritism constitutes a more serious obstacle. Family, school, regimental and other ties are difficult to overcome, and must, consciously or unconsciously, often decide conflicting claims. Great care must be taken that, under any proposed system, all personal feelings should be kept in strict subordination to the good of the Service, and that every officer should receive impartial treatment. The difficulty might be partially overcome by the adoption of a hard and fast principle, backed by the embodiment in " King's Regulations " of a paragraph to the effect that officers are forbidden to communicate with each other, except through the usual official channels, regarding the advancement, promotion or selection for employment of themselves or of other officers. It might even be conjectured that a regulation framed on these lines would be welcomed by many officers who are in a position to offer patronage. Lastly, it is suggested that officers recommended for acceleration should be referred to from the outset by a code letter or number.

4. The Pros and Cons Reviewed.

It may be held as proved that the advantages accruing from a system of promotion by merit would be out of all proportion to the initial difficulties which can be foreseen, and that such a system is not only practicable but is also highly desirable. Before putting forward any suggestions as to such a scheme to bring about this system, it is proposed to touch upon the present method of promotion current in the French Army, as it seems that a system analogous to that followed in the French Army might reasonably be adopted and adapted for our own Army.

5. The French System.

In the French Army, a compromise between promotion by seniority and by merit has been introduced, and is briefly as follows :—

2nd Lieutenant to Lieutenant ...	All by seniority (*ancienneté*).
Lieutenant to Captain	Half by seniority, half by merit (*choix*).
Captain to *Commandant* (Major)	One-third by seniority } in peace. Two-thirds by merit } in peace. All by merit in war.
Above *Commandant*	All by merit.

(*a*) For promotion up to *Commandant* (Major), committees, including all Generals serving in every *région* (corps area), assemble annually in each *région* under the presidency of the Corps Commander, and these prepare lists of those officers recommended for promotion. The lists are made out for each arm or branch of the Service, and are then passed to central committees, presided over by a member of the

Superior War Council and composed of the Inspector-General and the Director of the arm or branch concerned, who consolidate them for their respective arms.

(*b*) For promotion to Lieutenant-Colonel and Colonel, a committee is formed for a group of *régions*, presided over by that member of the Superior War Council who is responsible for the inspection thereof, and composed of the Commanders of the Corps included in the group of *régions* concerned. These committees draw up lists, by arms, of those recommended for promotion to Lieutenant-Colonel and Colonel, which are passed to a central committee, of which the Vice-President of the Superior War Council is president, where they are consolidated for the whole of each arm.

(*c*) For promotion to General Officer, one list is prepared by the Vice-President of the Superior War Council, who is the Inspector-General of the Army.

From the lists referred to in (*a*), (*b*) and (*c*) above, which amount only to proposals for promotion by selection, the Minister for War compiles the final *tableau d'avancement* annually for each arm and branch of the Service.

Promotion by seniority requires no comment, except as regards promotion to the rank of Commandant In that case committees sit to decide whether those due for promotion are in every way fitted for command. Those who are not recommended are passed over, and are placed on the retired list as soon as they have reached the age limit. The announcement of promotions in the *Journal Officiel*, the official gazette, includes a statement showing whether promotion was made by selection or by seniority. The whole system is greatly simplified by reason of the fact that in each arm all officers are on a General List.

The following are the minimum periods which must be passed in each rank before promotion to the next higher can be obtained :—

2nd Lieutenant	2 years, when promotion to Lieutenant is automatic.
Lieutenant	2 years.
Captain	4 years.
Commandant	3 years.
Lt.-Colonel	2 years.
Colonel	2 years.
Général de brigade ...	2 years.

This system appears to work very well and fairly in the French Army. Moreover, the French have recognised the principle that, with increased seniority, the divergence between the ability and qualifications of individual officers becomes more marked, and deserves special treatment.[1]

[1] The present tendency in the French Army is to abolish the various committees mentioned above, the Corps Commander himself preferring recommendations for promotion up to Major, and the Inspector of the arm acting similarly with regard to recommendations for promotion to Lieutenant-Colonel and Colonel. The system, however, remains unchanged.

6. Some Suggestions.

It is not proposed to discuss the French system in more detail, but to outline some suggestions from which a system suitable to our own requirements might be evolved on the French basis of promotion, partly by seniority and partly by selection. This method being accepted, the following proportions are suggested :—

2nd Lieutenant to Lieutenant	All by seniority in peace and war.	
Lieutenant to Captain ...	Two-thirds by seniority One-third by merit.	in peace and war.
Captain to Major	Two-thirds by seniority One-third by merit. All by merit in war.	in peace.
Above Major	All by merit in peace and war.	

Promotion by seniority would continue on the present lines, and therefore needs no further consideration. The question of the selection of officers for promotion by merit must be considered in some detail under the two headings of peace and war.

(*a*) *Peace-time promotion by merit.*—Some of the points which should be included are as follows :—

(i) A definite standard for promotion to each rank must be laid down by the General Staff. The promotion examination to the higher rank must be passed, and, say, 75 per cent. marks obtained in each sub-head. Greater care and uniformity must be obtained in rendering annual confidential reports; most questions should be so framed that a definite answer of "yes" or "no" can be given. With the increasing scientific and technical training of officers, there appears to be greater opportunity nowadays for discrimination as regards professional qualifications between individual officers, and such discrimination could be clearly defined and expressed in the annual reports, provided that the questions in these reports are rightly framed. At the present time it is suggested that there exists too great a possibility of the remarks of the reporting officer being incorrectly interpreted. By this is meant that "a very satisfactory officer" from Colonel A. may be intended to express the acme of praise, whereas the same remark from Colonel B. may imply that the officer in question is of little more than normal ability.

(ii) The age of a candidate must be sufficient to enable him to "carry" a higher rank. The following are suggested as the minimum periods which must be passed in each rank before promotion to the next higher rank can be obtained :—

2nd Lieutenant ...	2 years, when promotion to Lieutenant is automatic.
Lieutenant	5 years.
Captain	5 years.
Major	4 years.
Lieutenant-Colonel ...	3 years.

The ages for compulsory retirement would remain as at present.

(iii) As regards practical work, a candidate who is recommended and eligible for accelerated promotion under (i) and (ii) above, should be attached, under Brigade or Divisional arrangements, to another unit of the same arm or service, for a month or six weeks. in the capacity of the rank to which it is proposed to promote him. The commanding officer of the unit of attachment should render an independent report as to the officer's ability. Staff officers should be similarly treated. The G.O.C. Command would then approve each candidate by personal interview.

(iv) The Army Council, or a Selection Committee appointed by the Army Council, would finally decide each case, on the report of (i) and (ii), and on the officer's record of service.

(*b*) *War-time promotion by merit.*—In war time, the system could be greatly simplified. The minimum periods for promotion could be waived or reduced. Promotion would be based primarily upon the officer's record of service, and upon the recommendation of the commander of the formation in which officers are serving.

7. Conclusion.

This suggested system has now been briefly outlined. After its adoption, brevet promotion, with its temporary compensations and little permanent benefit, would no longer be necessary. Officers would advance—with entire justice, so it is claimed—in proportion to their ability and qualifications.

Objection may be raised that it would be necessary to place all Cavalry and Infantry officers on General Lists. The answer to this objection seems to be that it is by no means necessary to adopt this procedure under existing conditions, and it should, therefore, not be indispensable under the proposed conditions. Vacancies for promotion would occur then as now, and it would be a question of filling vacancies, not necessarily with the most senior, but with the most qualified.

In conclusion, it may be once more emphasised that no attempt has here been made to exhaust this complex subject of promotion by merit, but merely to set down in writing a few facts and suggestions to demonstrate the desirability, practicability and method of operation of such a system. In order to attain the maximum degree of efficiency in every branch of the Service, it is urged that a system of promotion by merit, running concurrently with the present system of promotion by seniority, will attract talent into the Army, while also increasing, by friendly competition, the efficiency of individual officers. The effect of such a measure will be reflected throughout all ranks of the Army. On the other hand, it must also be admitted that any suggested scheme of promotion by merit leaves many loopholes for criticism, while it is

difficult to compare our requirements with those of any foreign Army, owing to our totally different military obligations. The fact that, under the Cardwell system, half the Regular Army is permanently abroad, often in small detachments, further complicates the issue, and intensifies the difficulty of comparing the qualifications for promotion of an officer serving at Aldershot with one stationed in a distant garrison such as Bermuda. These are difficulties, however, which should not be allowed to stand in the way of the adoption of the equitable reforms involved in this weighty problem.

CAPACITY TESTS AND THE TRAINING OF THE FIGHTING MAN.

By CAPTAIN A. L. PEMBERTON, M.C., R.A.

" So long as the body of the soldier is maintained in a healthy condition . . . it must be accepted as a first principle that the training of the mind must take precedence over all other forms of training."[1]

THE truth of this statement cannot fail to be appreciated if we consider the conditions under which the average civilised man works to-day. From the time he gets up in the morning to the time he goes to bed at night he lives and moves in an atmosphere of artificiality. If his room is too dark, he turns over a switch and immediately a miniature sun smiles benignly down upon him from the ceiling. When he goes to the City in the morning he has only to press a button on the wall and a lift appears, ready to defy the law of gravity for his convenience. If he wishes to travel, he settles himself comfortably behind his newspaper and need only disturb himself to get out at his destination. All these, and many more, things he can do without troubling his head as to why they happen. He need know no more about the law of gravity than will prevent him from stepping into the lift shaft when the lift is not there. He need know no more about dynamics than will prevent him from stepping out of the train between stations. So long as the machine runs smoothly he is master of all he surveys.

It is when the machine breaks down, however, that the trouble begins. Then, if man has not learnt to think things out for himself, his power comes abruptly to an end, his nerve fails, and his initiative is destroyed. Discipline and organization, left to themselves, are unable to provide the necessary motive power. " To be disciplined does not mean that one does not commit any breach of discipline; that one does not commit some disorderly action; . . . It means that one frankly adopts the thoughts and views of the superior in command, and that one uses all humanly practicable means in order to give him satisfaction."[2]

This doubtless refers more particularly to the higher commander, but, since the words were written, the delegation of responsibility has proceeded further. " The wide decentralisation necessitated by modern weapons tends ever to increase the responsibility of subordinates; the efficiency of the leaders of the smallest units will often be the measure of an army's success."[3]

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[1] " Notes on Infantry Tactics and Training," by Lieut.-Gen. Sir G. M. Harper, p. 21.

[2] " Principles of War," by Marshal Foch, p. 102.

[3] F.S.R., Vol. II., Sec. Q, para. 2.

Clearly, then, this problem of mind training becomes of the greatest importance when dealing with the fighting forces of to-day, and, if our efforts in this direction are to be crowned with success, they must be based upon a suitable selection of the material at our disposal. We must be certain at the outset that we are not trying to force square pegs into round holes. To do this we must be able to isolate, and to measure, certain qualities of mind, just as at present we are accustomed to isolate and to measure certain qualities of the body. No one to-day would be likely to accept size alone, or the outward appearance of physical strength, as sufficient guarantee of a man's ability to undergo the rigours of a military campaign. A certificate of soundness would be required from a medical officer, and this soundness would be maintained, partly by route marches and other military exercises, but partly also by a correct use of physical training. From the physical point of view this is simple enough. We can devise simple exercises to do what we want, because we know what it is that we are after. We can measure the breadth of a man's chest, the rate of his pulse, or the strength of his handgrip, and—what is even more significant—we can see or feel for ourselves the action of each one of these physical qualities.

With the mental faculties, however, it is different. By none of our five senses can we appreciate the action of mental forces, and we have therefore come to regard mental ability as if it were a single quality that acted equally upon every function of the mind. A man is considered to be either a clever man or a fool, according to the way in which he happens to strike us in the particular situations in which we have seen him, without reference to his early environment and education. The idea that his mental organs may be sound, but badly organised, never strikes us, or if it does, we put it aside as being beyond the powers of investigation. So we make our selections by intuition rather than by analysis, and amend them, if need be, in accordance with results. It is a practical method of working, but it is uneconomical in so far as it leads to waste of effort in the case of those who fail, and it is hard on those failures because their inability is not discovered sometimes until it is too late for them to try their hand at something else. "Apart from other considerations, there can be nothing more discouraging than the realisation that a long period of training has only been partly effective and that the time so spent might have been used more profitably in another sphere."[1]

Now Dr. Spearman, in his presidential address to the psychological section of the British Association this year, described a new and most interesting theory of mental capacity, of which the essence was, according to the newspaper reports, that everyone is a genius at something and a fool at something else. According to this theory our capacity for any particular kind of work, or play, is made up of a constant "g", and a variable element, which will differ for each different kind of activity.

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[1] Report No. 12 of General Series No. 4, by the Industrial Fatigue Research Board, published by H.M.S.O. in 1921.

But to the military reader the point of interest is not the theory itself so much as the practice upon which it is based. What, it may be asked, is the use of all this theorising when we don't even know what intelligence or mental capacity is? The answer is that, although we may not be able to appreciate what mental capacity is by the light of any of our five senses, yet we can measure it by other means, and that is enough to give a start to the theorist. After all, " there is nothing new in the idea of measuring a thing first and finding out what it is afterwards. We do not know what electricity is, but we are so sure that it can be measured that we pay our electric bill without a protest."[1]

We are thus led to a consideration of the capacity test, as developed by psychologists in recent times, and the possibility of employing it to advantage for the future testing and training of the fighting man. As has been hinted above, the difference between the capacity test and the ordinary type of examination, or specialist's test, is that the one is prophetic whilst the other is retrospective only. The capacity test measures the " potential," or aptitude, of each individual for performing a certain kind of activity. The examination measures the amount of work that each individual has performed under conditions which are themselves by no means accurately known. The work may be the result of skill and inclination without training, or of skill and training without inclination, or of inclination and training without skill.

In designing a capacity test, therefore, our object is to make it as simple as possible, so that natural ability shall be at a premium and knowledge eliminated, as far as possible, from the contest. We have got to try and resolve a more or less complicated operation into its simplest possible elements, and devise a test for each of these elements in turn. And here let us admit that there is nothing surprisingly new in such a procedure. For hundred of years young people of both sexes have delighted in inventing new tricks and exercises for the display of nimbleness both of mind and body. There is a time-honoured rhyme about Adam and Eve and Pinch-me-well, and there are others, less crude in design and less painful to the victim, which persist to play a useful part when conversation languishes in the adult drawing-room. But they all have the same object in view, namely, the exposure of mental dullness and clumsiness of wit. They are in fact genuine, if primitive, forms of the capacity test.

In the business of fighting, where readiness of wit is of such extreme importance both to the individual and to the army, it would be curious if no attempt had been made to develop so fruitful a source of mental gymnastics. There is, in fact, a well-known game which has figured more than once upon the sports programme of an infantry battalion, and which goes by the name of " O'Grady Says." It is not proposed to describe this game, but any one who is acquainted with its rules will appreciate at once

[1] " Group Tests of Intelligence," by P. B. Ballard, p. 141.

its psychological value. It would be interesting to take a squad of infantry recruits and submit them at regular intervals to a test on these lines, with a view to seeing what degree of consistency there was in the results obtained.

For present purposes, however, a more specialised type of investigation will be presented in greater detail. The subject is unfortunately of less interest to the fighting forces as a whole, but, since it is chiefly the method that we are considering, it is hoped that this disadvantage will not be allowed to weigh too heavily by those who have had the patience to follow thus far and are prepared to proceed a step further.

To proceed, then, let us take coast defence auto-sight gun laying as the subject of our investigation. What capacity tests will suit the auto-layer's needs? The first thing to do would be to analyse the work of the auto-layer in order to determine what capacities it requires, and as the result of such an analysis we might decide upon five essential qualities, as follows :—

1. Rapid visual observation.
2. Rapid visual discrimination.
3. Rapid mental discrimination.
4. Good immediate memory.
5. General intelligence.

Rapid visual observation is required to enable the layer to keep his pointer layed on a rapidly moving target, such as a torpedo-boat or coastal motor boat. It differs slightly from the next faculty, that of rapid visual discrimination, in that no act of selection is involved. Such selection becomes necessary, however, when there is more than one target visible and a certain target has to be picked out in accordance with the distribution of fire scheme in force. Actually this is the responsibility of the No. 1, and not the layer, but since all layers are prospective Nos. 1 it is desirable that they should be possessed of such a faculty.

Rapid mental discrimination is again slightly different to rapid visual discrimination. It is required to enable the layer to discriminate spontaneously between orders, corrections, etc., which affect him and those which do not. It will also come into play when applying " blind " settings for range and line, if he is employed at any time as a No. 1 or setter.

By immediate memory is meant the faculty of retaining visual, or other, impressions vividly over a short period of time. Thus a layer may have to retain an order or correction throughout some unavoidable delay, prior to the execution of such order or correction. This is a different thing to memory as normally understood, and from observation it would appear that the two faculties may be quite independent of each other.

General intelligence may or may not affect the actual operation of laying a gun, but it will certainly be required for the care and adjustment of the equipment, with which the layer will be charged.

So much for the qualities that we shall have to measure. The next step is to devise a test for each of these qualities. And here a word of caution is required. It is simple enough for anyone with a good memory for parlour games to devise a test that will appear to fit almost any capacity you like to mention. But appearances of this nature are unusually deceptive, and he would be asking for trouble who built a theory upon tests having no other foundation than his own imagination. It is here that science steps in and demands a proof of validity that shall be independent of human fancies. The test must itself be tested in the cold light of logic before it can pass muster as a scientific instrument of precision.

To do this it must be given to a large number of people, selected at random from all classes of the community, and a record must be made of the marks obtained by each individual. If it is a good test, it will be found that the scores will group themselves according to the familiar law of probability, that is to say, the majority of the scores will lie in a group midway between the maximum and minimum score obtained. If they do not, then the test must be abandoned and a new one designed to give the necessary dispersion.

This is a most important aspect of the capacity test, and it provides one of the most striking differences between this type of test and the old-fashioned examination to which all of us are accustomed. There are certain legitimate reasons why the results of an examination at the end of a military course of instruction should show a distortion of the normal curve of error. Such, for example, is the fact that the *personnel* is usually chosen for general keenness and ability. There is also, however, the possibility of another, scientifically less admirable, explanation. In most examinations of this nature there is a qualifying standard of marks, usually about 60 to 70 per cent., which has to be obtained before a certificate can be granted. Now for several obvious reasons it is undesirable to make the gaining of a certificate too difficult, and there is a tendency therefore to set examinations that throw the whole of the scores into the top half of the scales and thus reduce the size of the individual variations. In the case of most military courses this may not matter very much, since ability is not the only quality to be looked for in the future instructor or leader of men. But in a capacity test it might ruin everything. The capacity test is designed to reveal the man as nature made him, and not as he has made himself.

It will be obvious, then, that the choice of a capacity test is not so easy as might have been expected. Much patient research work is required before any guarantee of utility can be given, and this research work, by its very scope and nature, is beyond the reach of any but the specially endowed scientist. Nevertheless, once it has been done, the results become available for all and sundry, and a reference to current psychological literature will show that a large number of useful tests have already been standardised.

Two of these tests may be given as examples :

Cancellation Test.—For testing the capacity of rapid visual discrimination.

The Woodworth and Wells " number group checking " test. The subject is given a test paper on which are printed seven vertical columns of six-place numbers, and he is required to underline each six-place number containing both of two figures, say, a 2 and a 9. The score is the number of six-place numbers correctly underlined in two minutes, minus 2 for each error. The subjects are instructed to work down the columns in a particular way, to ensure that all employ exactly the same methods.

Substitution Test.—For testing the capacity of immediate memory.

The subject is required to write above each letter in a page of widely spaced letters a specified digit in accordance with a " substitution key " printed at the top of the blank. The score is the number of " substitutions " correctly made in three minutes.

Anyone, of course, could work these tests. They are simplicity itself. And the interpretation of the results is almost as simple. By testing a test we prove that it is a good test for something. The next point to consider is what that something is, and whether it is of any value in the particular kind of activity with which we are dealing. So far we have merely invented names for certain suspected qualities of the human mind. But the names, as names, are worth no more than the paper they are written on. What we have now got to do is to find out who are the best men at each of the above tests, and to see whether they are also the best men on the gun. If they are, then we have at last made certain that we have got what we wanted, namely, a means of predicting which men, out of a bunch of recruits, are likely to develop into reliable auto-layers.

It is unfortunate for the purpose of the argument that it should be impossible at this point to introduce some figures in partial substantiation at least of all this theory. As an excuse must be pleaded the unsuitability of the conditions under which the observations had to be made. Indeed, it was realised from the start that, owing to these conditions, *i.e.*, short courses of a month's or a fortnight's duration at the Coast Artillery School, it was not going to be at all easy to determine who were actually the best men on the gun, and that the final proof of the validity of the capacity test must lie with the regimental officer, if and when its possibilities should appeal to him. Nevertheless, the attempt was made, and the results, though they provide no definite answer to the principle problem under investigation, do perhaps reveal something that is worthy of consideration. In the following Table is given a summary of these results, showing the average number of marks obtained by each army rank in the two tests referred to above, from which it will be seen that there is a distinct upward tendency from the gunners at the bottom of

the list to the officers and N.C.O.s of the Gunnery Staff Course at the top :—

Rank.	Nos. Examined.	Cancellation Test.	Substitution Test.
Officers - - - -	12	42	101
N.C.O.s - - - -	15	41	102
Sergeants and above -	13	31	81
Lance-Sergeants - -	9	42	92
Bombardiers - - -	13	35	76
Lance-Bombardiers -	24	34	80
Gunners - - - -	49	29	65

This at any rate is re-assuring, for it means that the capacity test confirms on the whole the soundness of our present methods of selection. Much difficult pioneer work may still be required before it can be popularly accepted and applied to the needs of our everyday existence, but at least we can feel assured that, however little good it may do, it is incapable of working harm or injustice. And we should do well to ponder over this fact, since there is an undoubted tendency towards a contrary belief, based, one may suspect, upon a certain weakness of human nature.

We are naturally sensitive to the defects of our minds as well as of our bodies, and would fain hide them behind whatever garb civilisation may have to offer. Indeed, there must be few who have not got some little mental weakness tucked away beneath an outward show of learning, and wherever this is the case there must be a tendency to resent the efforts of those who would tear aside the decent garb of knowledge and expose the nakedness within.

In conclusion, if the above argument has failed to convince anyone of the possibilities of the capacity test as a means of selection, it may be possible to prove a value of another kind. At the beginning reference was made to the necessity for some sort of physical exercises in addition to the regular military training of the fighting man, and hinted at the existence of a mental parallel. That idea might now be developed a little further.

Whatever may be our own private views on the nature and origin of mind, there can be few who will dispute the extraordinary power of habit. " It is of extreme importance that those whose duty is to lead men in action should have these rules (of war) engrained into their very instinct. To act in accordance with them should have become habitual. . . . It is wiser to establish a habit than to expect in every case unerring initiative."[1]

Nor does this argument apply only to the leader of men, or even to the fighting man. It seems to be a universal fact that the unconscious mental processes are both swifter and surer than the laborious efforts of

[1] " The Science of War," by Col. G. F. R. Henderson, p. 161.

consciousness. Take, for example, the more or less complicated business of walking along a crowded thoroughfare. A man, while sauntering down a street, eagerly scanning his newspaper, escapes collision with a mass of hurrying pedestrians. Then something catches his eye, he looks up to find a figure looming in front of him, and agonized moments follow whilst he executes a clumsy *pas seul* under the vacillating influence of returning consciousness.

The successful man is, therefore, we may assume, the man who has kept his unconscious mind well stocked with useful habits, and has so left his consciousness free to deal with or, better still, to foresee, the unexpected and the difficult. And a mind, to be considered well-stocked, must be above all things well-balanced. It will not be sufficient to exercise just one or two of the most obvious mental faculties, any more than it is sufficient to exercise just one or two of the more important muscles of the body. Observation, for example, is an excellent thing, but observation alone, without the power of rapid comparison, is of little value. The mere observation of a motor-bus would not help us, if we were unable to appreciate its inertia and to compare it with our own. It is only by all-round mental development that we can hope to achieve that readiness of judgment which is the particular object of every fighting man.

So we are finally brought to the capacity test as a simple measure of mental hygiene, a sort of mental dumb-bell with which to exercise our dormant faculties. The most essential thing about any mind is that it should move, and it is only by concentrating on the little movements first that we can hope to achieve that final consummation of mental mobility that was the outstanding feature of the greatest of all military leaders, " Those magnificent strokes of genius which seemed dictated by the circumstances of the moment were due, as Napoleon himself implies, to a habit of calculation so rapid and so accurate as to seem to the uninitiated like inspiration."[1]

Mobility is in fact the first principle of mental, no less than of military, organization, and mobility can only be maintained by constant exercise. If reading books alone could be guaranteed to make us think, then by all means let us read books in preference to chasing meaningless figures up and down a page. But, alas, how often are the words we read as meaningless to us as any figure yet conceived! How often is the expression " I think " but a camouflaged edition of " I feel," " I have read," or " I have been told "! By finding a six-place number containing a 2 and a 9 we may not be exercising any of the higher faculties of the mind, but at least we are exercising something. By reading a book, or by listening to a lecture, we may be doing no more than imitating the gluttonous inactivity of a sponge.

[1] " The Science of War," by Col. G. F. R. Henderson, p. 183.

ECONOMIC INTELLIGENCE.

By "ROUSSEAU."

"Il ne suffit pas de vouloir ni de pouvoir en matière d'administration ; il faut savoir."—CHASSIGNET.

THE effect of the application of the teaching of experience has been to speed up concentration, the approach march and the deployment of a force, while accelerating the subsequent phases of battle. Chief among such lessons are those based on a knowledge of the enemy's armament and methods of training—in a word, upon Intelligence. Now, in face of the growing intricacies of daily life, it has grown more and more difficult to separate the political aims of a nation from its military problems; consequently it has also become essential for the economic life of all potential enemies to be carefully studied. Not because knowledge of the political economy of any State will yield intelligence of purely military value, but that it will give an indication of the force behind the initial blow and of the striking State's power of resistance. "The value of force is relative to its position,"[1] and, accordingly, it has become necessary to appreciate and gauge the value and position of all the material forces of each such potential enemy. For instance, it is of primary importance to know every possible adversary's capacity to produce the chief strategic commodities, viz., coal, iron, oil, cotton, timber, rubber and nitrogen; also the relation of that production to normal civil requirements. Again, the methods and places of the manufacture of all articles of commerce and war derived from these commodities must be explored and located in order to provide an indication of the opponent's power to sustain a campaign. Finally, hostile means of transportation, their present capacity and facilities for intensive development in war, should be studied so as to discover the possible weight and direction of the initial blow and to afford an indication of the power to manœuvre. It is thus seen that there exists a vast field to be covered if the fighting forces of a nation are to be afforded the greatest measure of assistance from its Intelligence services. As each fighting force is interdependent, it follows that the organization charged with all "administrative" reconnaissance and intelligence must be common to all.

Before the reorganization of the War Office in 1906, the executive methods of military administration were far from being abreast of the times; even to-day there is an appreciable lag. "The military mind notoriously runs in grooves,"[2] and soldiers are pre-disposed by tradition

[1] "The Direction of War," Major-General Sir W. D. Bird.
[2] Earl of Birkenhead.

against change. The reason advanced for this attitude is that in other professions advancement depends on hard work, whilst efflux of time takes the place, in a soldier's life at any rate, of much of that expenditure of effort upon which a barrister, for example, depends for advancement. The latter at the age of thirty-five may be well known; a statesman may be far on the road to preferment; a doctor have laid secure foundations of an enormous practice; but under no circumstances could the normal soldier at that time of life be anything more than a junior regimental major, whilst many may still be captains. There is, consequently, but little inducement for the soldier to work hard, since essential knowledge can find but little scope and a junior officer sees many others, senior only to him in point of service but not in either knowledge or scholarship, steadily mounting the ladder by the sole aid of the calendar. Nor is this apparent digression without its value, for if there is but little inducement for an officer to learn the essentials of that part of his profession which provides the glamour, how little must there be for him to study, analyse, and tabulate such dull and seemingly unmilitary data as the organization of industry. Yet it is upon the latter that success in modern war is primarily dependent. It may thus be pertinent to ask what proportion of his time does a military attaché devote to the *industrial* problems of the State to which he is accredited? Certainly more than was formerly the case, but certainly insufficient for the requirements of war. Yet the price paid for delay or neglect in assimilating all improvements in the material developments of the daily life of ourselves, of our dominions and colonies and of foreign countries is only to be paid in blood and treasure in war. In peace time indeed, and at conferences, lectures, staff rides, or at exercises and manœuvres the account may be often presented, but never met. The institution of committees of investigation and of offices of *liaison* at the outbreak of war, or even the provision of such bodies to be formed on mobilization only in time of peace, is equivalent to a proof that one of the great lessons of war has still to be learnt: —"In war it is too late to fill an empty pate."[1]

History, too, teaches that British soldiers have relied in the past for success upon individual bravery and the national genius for improvisation, while years of peace are devoted either to acquiring endurance by sport or to training in tactics by exercises and manœuvres. It is not to be denied that this has been the soldier's *métier* as it has been popularly defined in this country. Broader strategic conceptions and the relation between strategy and supply have always been but cursorily studied. The word supply is here used in no narrow sense of food and forage, but is made to encompass all the material paraphernalia necessary to ensure success.

Now, knowledge of the strategical conceptions and tactical methods of potential enemies, which forms the basis of the organization of the

[1] Lord Napier of Magdala.

naval, military and aerial forces necessary to ensure Imperial security, is procured by all those forms of licensed international investigation that are familiar to all. Reconnaissance is the primary function of those concerned—reconnaissance of the ground and of the brains of the leaders of a potential enemy; such work is, in fact, a matter of considerable delicacy and needs to be executed with consummate skill. On the other hand, the knowledge of the administrative methods and tendencies of those who may be our foes has, in the past, never been so efficiently tabulated as that of their tactical methods, armament and mobilization equipment. Nevertheless it is obvious that a full knowledge of supply can be gleaned with greater ease and certainty; it may, in the future surpass in importance that of strategy and tactics; it certainly calls for great application on the part of those charged with its collection and meticulous accuracy in its compilation. The work may also be carried on in the shadow of large shelves and many files, and with none of the risks or glamour which permanently surround the normal secret service agent. For it scarcely requires examination to show that strategic and tactical plans, or war emergency schemes, can be changed and altered with a rapidity which may baffle the most astute research. Supply lies on more open ground. Railways and roads cannot be laid in secret; rolling stock and vehicles are shown in company reports or in inland revenue statements. Information is flashed throughout civilisation as the result of a simple question asked in any House of Parliament. Aeroplanes can scarcely be made or stored in secret, though new designs can be kept from the light of day. Ocean-going transport is not built and safely hidden in store until the day of mobilization, as it represents far too much wealth and is under the direction of that most timid of adventurers—the company shareholder. Examples such as these could be multiplied indefinitely.

This Department of Economic Intelligence which should be instituted so that the Imperial forces may wage war with the greatest advantage can only operate as a sub-committee of the Committee of Imperial Defence and its records would be available for the study of each fighting service. It is suggested that it should consist of seven members: a chairman appointed by the War Office and six others; one being appointed by the Admiralty, the War Office and Air Ministry respectively. The Colonial Naval member would be appointed by Australia, the Military member by Canada, and the Air Force member by South Africa. Complete *liaison* with other Imperial and Colonial Departments of State is a *sine qua non*. The Department would deal with the problem from four major points of view: National Resources, Industrial Capacity, Transportation, and Climate.

(i) *National Resources.*—The amount of coined specie, convertible wealth, available raw material and facilities for their production, together with the extent of the exploited and potential agricultural, *i.e.*, food-producing, areas, must be delimited to within a small percentage of error in order that the solidity of the probable resistance

may be accurately gauged. By these standards also it is easiest to estimate our own power.

There exists at present a very large fund of data and of experience in the Treasury and Bank of England, as well as in the private banking companies and in the Economics Sections of the Universities. That Section of the new Department which will deal with the coined specie and convertible wealth would be managed entirely by the Treasury without military intervention.

Much information which bears upon the actual and potential supplies of raw material, *i.e.*, minerals, vegetable products and other food, exists in the archives of the Board of Trade. It needs only to be analysed and kept up to date by means of consular and other reports in order that world supplies may be tabulated. This work must be the basis on which plans are laid to cut off any enemy supplies when and where necessary. Similarly, it should be possible to divert supplies to the satisfaction of Imperial needs. Information of this nature, it is now obvious, must be invaluable to the fighting services: it enables them to strike by means of raids or minor expeditions at the sources of an enemy's ability to resist, whether the aim be the destruction of coal mine machinery from the air or the seizure of tribal grain by armed columns. It is, of course, accepted that the mere embarkation of small forces on such minor expeditions or the despatch of raiding forces on an enemy's trade will not conquer the will to resist and that these side issues must be regarded as complementary to the general scheme of operations.

Facility of production now depends upon scientific development within a nation, upon its transport services and its methods of handling goods. Many learned scientific bodies in all countries are now-a-days so international in their activities that it is essential to bear in mind that what is known by us of other countries must be written off against the information which is possessed by others of our own methods.

The intricate co-operation of the new Department with the Board of Trade is thus essential in order that the availability of food and forage in all areas where forces may be sent should be clearly known. The incidence and intensity of its production are of like importance, for these factors are liable to continual change and the economic status of a nation is largely dependent upon its capacity to feed its population. Special reports on the economic trend and progress of nations are vital. In future it may be accepted that large wars will be far more economic in character and so it is plain that with the ever-increasing international aspect of commerce a minor campaign might assume the proportions of a world conflagration. The historical aspect of the commercial revolution caused by mechanical transport needs no reiteration, though its effect upon present policies of nations is often overlooked. The economic aspect of future campaigns, though of absorbing interest, does not lie within the scope of these lines.

Information is also needed with regard to the acreage and the capacity of ground, now lying fallow, to produce food. In climates

dissimilar to that of England the productivity of the soil due to the intensity of the seasons is greater than with us. The importance of this fact to operations conducted in areas where cereals and forage may have to be grown for the support, or partial support, of the forces engaged must be recognised, as shipping might be required for industrial products to aid in the prosecution of the campaign.

(ii) *Industrial capacity.*—The industrial capacity of all nations has attracted but little thought in the past. The application of science to national requirements is now exercising an immense and growing influence on national conceptions of war, though it is doubtful whether its results as yet are anywhere like fully appreciated. Take, for example, the power to extract nitrogen from the air, technically known as the fixation of nitrogen, which is becoming a direct measure of the capacity of a belligerent to produce explosives and noxious gases. Should a nation possess enormous plants and lead the world in this respect, then will it be in an unrivalled position to produce an adequate ammunition supply for its artillery and to exploit chemical methods of war.

Agriculture primarily produces food products, but industry increases the products of men's hands. The former is limited by the cycle of nature, the latter by the physical endurance of mankind. The advent of machinery has powerfully affected human capacity and has greatly enlarged men's potentialities. Thus the relation of machinery to the labourer has to be studied in the case of all nations: the effects of this relation on national character have also to be probed. It is known, for instance, that many non-European races are not clever manipulators of machinery; others learn easily and operate machines successfully, but, if removed by illness or other causes from their calling for even short periods, cannot take up the threads from where they left them, but are compelled to start again. Again, others are clever imitators and can improve mechanical instruments with considerable adroitness, but the capacity for invention is denied to them.

"To organise producers and merchants as a powerful army subjected to an active and intelligent guidance, so as to secure an industrial victory by order and unity of efforts" this is to-day the aim of virile nations just as it was Colbert's aim in the days of Louis XIV. This end cannot be achieved if knowledge of rivals and their methods is denied the "active and intelligent" guiding force. The industrial capacity of a nation is rapidly becoming a dominant factor in judging of its military capacity. A highly industrialised people might turn the raw products of the earth into engines of war with amazing speed and thus deliver a rapid blow in offence or defence and overwhelm a far stronger but less organised people.

(iii) *Transportation.*—The application of mechanical power to methods of transportation has resulted in a great economic change, and the effect of mechanical transport on warfare has been equally momentous. Men can now be carried to fight; they can even fight in machines. The eyes of an army work many hundreds of feet above,

and many miles in front of, the body. With this physical revolution there has been coming an accompanying revclution in thought. Ideas of time and space, tactical opinions and strategic conceptions have been profoundly affected; yet how many realise that the processes of warfare are still more rapidly changing? With the ever-increasing rapidity of transportation the methods of handling men and merchandise remain antiquated. A train is capable of perhaps sixty miles an hour, yet the speed of removal of merchandise to the next *échelon* is that of a slow human walk. A ship will be loaded with great speed, but is liable to be unloaded at a port of disembarkation by hand. Thus it is seen that careful reconnaissance of existing port facilities and projected improvements and extensions, together with appreciations showing the most rapid and militarily useful lines of expansion, are vital to the successful landing of military forces. And this is but a single phase of a many-sided problem. Considerable thought will have to be given in peace to problems of transportation in all countries, if our national forces are to fight with success.

To the great questions arising out of the best methods of moving formations overland—that is, whether by road or independently of roads and paths, whether by vehicles moving on wheels or tracks, whether the means of propulsion should be steam, internal combustion, or electricity, or whether even by air, and whether the design of vehicles in daily use in civil life are fitted to military requirements—the writer does not aspire to investigate. Suffice it for him to indicate that in daily life, outside the fighting services, there are many and able forces at work improving methods of transportation in all countries which must be understood completely by all the branches of the fighting forces concerned.

(iv) *Climate.*—The climate of countries is of increasing importance; although the cycle of the seasons, the length of day and night are beyond human control, yet many climatic conditions are subject to human interference and to known laws. For instance, it is seen in Scandinavia and on the eastern seaboard of America and in Sussex that the " wherever wood has been cut for fuel either as wood or as charcoal, forests have been destroyed, the rainfall diminished and the soil is washed away in rain and flood."[1] As the demand for liquid fuel increases, attention is being turned to the masses of tropical vegetation which may in the future be used to produce alcohol from their cellulose contents, while with the progress of irrigation rapidly growing vegetation may be cultivated for direct conversion. Thus will other areas than those of tree forests be cleared for other purposes than the acquisition of solid fuel or of paper and artificial silk production; so the climate will change. On the other hand, by the processes of irrigation and by vast systems of drainage, desert and bog may be reclaimed and climatic conditions induced, the extent of which it is not even possible

[1] Earl Balfour, K.G.

to hazard a guess; for it is well known that the heat of the sun's rays does not penetrate dry and humid atmospheres with equal facility, so that a dry atmosphere brings with it extremes of temperature, while a moist atmosphere encourages more equable conditions.

From the point of view of military activity in the air climatic conditions are of great importance. Heavy rains also render aerodromes useless, not because landing is prevented but sure " taking-off " becomes impossible and violent storms render brick or stone protection for machines imperative.

Chemical warfare depends very largely upon satisfactory climatic conditions: the speed and direction of wind, its liability to sudden changes and humidity are essential factors.

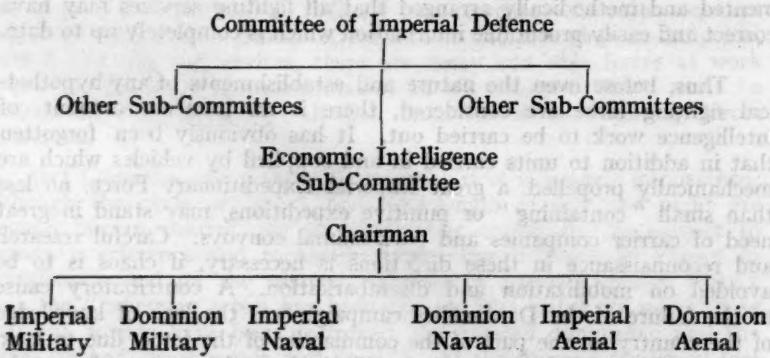
It is known from historical research that many operations on land have started in the autumn. May it not be that nations will take advantage of late autumn and early winter fogs and gales to commence operations, so that hostile air activity may be reduced to a minimum? A complete climatic appreciation of all countries is necessary, firstly, in order that loss by disease may be eliminated, and, secondly, so that combattant forces may benefit to the fullest possible extent from the co-operation of aircraft and other various forms of mechanical traction which are now available. The reports of inhabitants and of those who have spent a part of their lives in the areas concerned need to be supplemented and methodically arranged that all fighting services may have correct and easily procurable information which is completely up to date.

Thus, before even the nature and establishments of any hypothetical fighting force are considered, there is an immense amount of intelligence work to be carried out. It has obviously been forgotten that in addition to units carried in and supplied by vehicles which are mechanically propelled, a great Imperial Expeditionary Force, no less than small " containing " or punitive expeditions, may stand in great need of carrier companies and pack-animal convoys. Careful research and reconnaissance in these directions is necessary, if chaos is to be avoided on mobilization and disembarkation. A contributory cause to the failure of the Dardanelles campaign was the lack of knowledge of the country on the part of the commander of the force, due to lack, or unavailability, of information. He had good cause to know the imperative need of prior reconnaissance in the matter of language, communications and local supply. These difficulties were not ameliorated by reliable and easily procurable information based on military attachés and consular reports. The inadequacy of the system then in force is plain. Is it possible that a punitive force might be ordered to leave this country where it is equipped with lorry transport organization to exact penalties from tribes in whose territory there are no roads, the provision of carriers and pack-animals being left to impressment on the day of disembarkation? These and greater errors are avoidable by organised economic reconnaissance and intelligence.

The generalities of the case having thus been discussed, it is now urgent to proceed to a consideration of practical proposals to deal with the subject. To ensure that the Imperial Forces of the Crown will wage war with the greatest advantage, it is vital that the administrative and industrial intelligence which is required by the fighting services be procured, collated, and distributed by a department or branch which is not primarily a part of either the Navy, the Army or the Air Force. It is plain that the material resources and transportation services of a nation are of equal moment to each service; only the methods of manufacture of certain articles concern each service severally. Thus as the policy of the Army, the Navy and the Air Force is controlled by the Government, so should the organization charged with economic intelligence be controlled by a department independent of and possibly superior to the fighting services; that is, the Department of Economic Intelligence.

The nature of intelligence makes it imperative that the work of the Department be carried on in secret, while the actual information gleaned, its method of tabulation and the uses to which it is put, must of necessity remain hidden from the light of popular criticism. The principles of the organization, however, may be discussed.

The following paradigm shows a suggested constitution of the sub-committee and its relative position to other authorities:—



(i) Assistant military attachés or officers specially attached to Embassies and Ministries should be charged with the acquisition of information upon certain bases which would vary according to varying international situations.

(ii) The Intelligence Sections of Imperial and Dominion General Staffs would forward the results of their investigations with their views and recommendations.

(iii) The Sub-Committee would be empowered to institute a system of research among the records of other Departments of State for such information as they might consider advisable; they would analyse,

tabulate and collate all information given them and periodically compile reports by countries and areas for confidential circulation.

It is impossible in dealing with this subject to ignore the question of the personalities of those concerned. Analytical power, capacity for organization and ability for précis work are essential in the members; power of application, linguistic knowledge, tact and extreme adaptability are the first qualifications for the attachés; these latter must also be abreast of civil development as well as being *au fait* with the trend of modern military thought. Though not perhaps staff officers, they will work as such, and the best will be those who have a dual personality. In the first place they must be noted for ability in their profession, while, secondly, they must be capable of interpreting to the fullest extent the words of the late Viscount Morley: "The right of thinking . . . . independently, of using our minds without excessive awe of authority and shaping our lives without unquestioning obedience to custom is now a finally accepted principle, in some sense or other, with any school of thought which has the smallest chance of commanding the future. It is better to have the burden of impracticableness than to stifle conviction and to pare away principle until it becomes mere hollowness and triviality."

With the increasing complexity and speed of life, there also increases the complexity of the military organization which is necessary to protect it from disruptive action. So it is obvious that additions to this organization become necessary with the passage of time. Such an one is unquestionably the Department of Economic Intelligence.

EXPERIENCES IN THE CAUCASUS AND NORTH PERSIA, 1914-1918.

By Brigadier-General F. G. Marsh, C.M.G., D.S.O.

BEFORE the War, the ordinary Britisher only thought of the Caucasus as a range of mountains somewhere between Russia and Persia, with one of the biggest of the world's oil supplies at a place called Baku.

The Caucasus, Turkish Armenia and North Persia lay out of the beaten track, and, except for a few men interested in oil or carpets, few travellers ever went there, and certainly very few soldiers.

Meshed is in the north-east corner of Persia, about equi-distant from the frontiers of Russian Turkestan and Afghanistan.

It is the principal town within a radius of several hundred miles, and a very holy place with Mahommedans—at any rate with the Shiah Mahommedans—owing to its being the burial place of Imam Riza, one of the biggest saints in the Mahommedan Calendar.

No Britisher or any other foreigner was then allowed to enter Afghanistan (a veritable "No-Man's Land"); it was also very difficult for anyone to go to Russian Turkestan; at the same time it was necessary for our General Staff to know what was going on there, and Meshed, owing to its position, was the most convenient place for an Intelligence outpost, which was attached to our Consulate-General, and entrusted to my charge.

For some years before this, the province of Khorassan, of which Meshed is the capital, had been occupied by Russian troops; there had been a good deal of trouble between these troops and the Persians; the Russians had bombarded the Shrine of Imam Riza at Meshed, and still had a garrison in the town.

On the outbreak of war in August, 1914, I had been at Meshed for nearly a year, touring the country to the Afghan and Russian frontiers, *e.g.*, at Zulfikar; adding to the information contained in our route-books; reporting on tracks that were fit, or could be made fit, for guns, motor-lorries and so on; generally keeping eyes and ears open; and, last but not least, living on friendly terms with the officers of the Russian garrison, and especially with my opposite number, the Russian Military Agent, Colonel ——, who, similarly, was continually on tour, adding to the information contained in *Russian* route-books.

At that time the Turkish forces in Eastern Asia Minor were distributed in two Inspection-areas on the eastern frontiers, and comprised the IX, X, and XI Army Corps on the Caucasus front, and the XIII and XVIII in Mesopotamia.

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BLACK SEA
PERSIA
COSSACKS
ARMENIA
MESOPOTAMIA
BAGHDAD
KHORASAN
Askhabad.
Kuchan
Meshed.
Zulfikar.
Krasnovodsk
Enzeli.
Kazvin
Teheran.
Hamadan.
Kermanshah.
Baku
Tabriz.
Lake Urumia.
Julfa.
Bijar.
Panjvin.
Suleimanie.
Rowandiz
Kirkuk.
Erbil.
Kifri
Tekrit.
Tiflis
Georgian Military Road.
Alexandropol.
Ardahan
Kars.
Sarikamish
Alashkert Valley
Lake Van
Urumia
Mosul
Batum.
Trebizond
Baiburt
Erzerum
Erzingan
Bitlis
Tigris R.
Euphrates R.
Hit.
Ras al Ain.
Scale of Miles
0 50 100 200 300 400 500

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Lake Urumia
Bijan
Penjvin
Sulemanie
Rowandiz
Kirkuk
Tekrit
BAGHDAD
Julfa
Lake Van
Mosul
Erbil
Tiflis
Georgian Military Road
Batum
Olti
Ardahan
Kars
Alexandropol
Sarikamish
Erzerum
Baiburt
Trebizond
Erzingan
Bitlis
Hit
Ras el Ain
TIGRIS
R. EUPHRATES
Scale of Miles
0 50 100 200 300 400 500

The Russian troops in this area consisted of the I and II Turkestan Army Corps, in Russian Turkestan; the I, II and III Caucasus Army Corps in the Caucasus, with the IV Caucasus Army Corps in process of formation, and a small force of Persian Cossacks under Russian officers in north-west Persia.

When war broke out, the I and II Turkestan Corps expanded into the I, II, III and IV Turkestan Army Corps, and all of these, except the II, which was later on sent to the Caucasus, were taken at once for the main Russian front.

The same thing happened in the Caucasus. The best troops, the II and III Caucasus Army Corps, and the famous Caucasus Cavalry Division—one of the best cavalry divisions in Russia—were transferred to the main theatre of war, to the German front.

Consequently, when Turkey joined Germany and Austria and in December, 1914, invaded the Caucasus and north Persia, the Russians had very few troops to meet them with. The Turks put in three strong corps, the IX, X, and XI, which had always been quartered in peace time on the Russian frontier, and very nearly took the Caucasus. As it happened, General Yudenich, then Chief of the Staff of the Caucasus Army, saved the situation when the Army Commander himself had given it up for lost, and badly defeated the Turks at Ardahan and Sarikamish.

But it was touch and go; the Turks had occupied Tabriz and looked like overrunning Persia as far as Teheran. Up to this time our General Staff had no means of knowing what was going on in north-west Persia and in the Caucasus; and, in January, 1915, I was ordered to Tiflis, the headquarters of the Viceroy and Commander-in-Chief, to watch the situation and report to London and to India.

A glance at the map shows how central Tiflis is. Besides the Russian telegraph which runs due north, there is an excellent all-British line (the Indo-European Telegraph) which runs through Tiflis, from London to Karachi—of course, during the war by sea to Karachi—but even by this circular route Tiflis was only an hour by telegraph from London.

I started from Meshed at 3 a.m. one morning in January with two Cossacks as escort and, driving with changes of horses, got into Kuchan, at the foot of the Elburz range, that night. This range forms the natural boundary between Russian-Turkestan and Persia; there are very few passes for carriage roads or railways. After one more night on the road in the mountains at a Cossack post called Durb Adam, and crossing the frontier at Gaudan, we arrived at Askhabad on the evening of the third day, the total distance being about 250 miles.

At Askhabad I got the train to Krasnovodsk, on the Caspian Sea; thence by steamer to Baku and train to Tiflis, which was reached on the seventh day—about a thousand miles.

The Viceroy, Count Vorontseff-Dashkoff, was a very old man and too ill to see anyone. Although I tried to see him several times in the course of as many months, I never saw him officially; but the Army

Commander, General Yudenich, who was at Tiflis, received me and gave me a chair and table in the Intelligence Branch of the General Staff there.

My job was to obtain information: in the first place about the enemy, *i.e.*, the strength, distribution and movements of Turkish troops in any of the theatres of war—the Caucasus, Mesopotamia, Egypt and Thrace—principally, of course, by means of identifications secured on the Caucasus front from prisoners or from agents. I had to sift this information and telegraph what I believed to be reliable to our own War Office.

The Russian General Staff were quite communicative about the enemy—in fact, even too much so—and the most difficult part of my job was to reconcile the information given one day with the information given the next day.

In the second place, our War Office had to be kept informed of the general dispositions and strengths of the Russian columns. On this subject the Russians were very secretive. One must bear in mind that we had been regarding each other, in that part of the world, for many years with a good deal of suspicion.

One of the first Commanders with whom I stayed at the front was General Prjevalski, then commanding the II Turkestan Corps (afterwards Commander-in-Chief in the Caucasus). He had been Russian Military Agent at Erzeroum for 15 years, at one period of his career—and very well he used his knowledge of the country in February, 1916, when he led his corps over the mountains, in the depth of winter, on to the left flank of the Erzeroum defences One evening at dinner General Prjevalski turned to me and said: "While you were at Meshed, I suppose you were watching this very corps from over the border, what?" and he winked and laughed. He, at any rate, hid nothing, but detailed one of his most communicative staff officers to take me round the front of his Corps, and was always one of the best friends we had among the Russian Commanders.

The position in January, 1915, was this:—the II Turkestan Army Corps at Olti, inside the Russian frontier; the I Caucasus Corps at Sarikamish (on the site of the big battle where General Yudenich had smashed an entire Corps so badly that it took 12 months to recover); and the IV Caucasus Corps with all the Cossack cavalry that could be got together—some two divisions at that time—outside the Russian frontier, with headquarters in the Alashkerd Valley, its advanced troops as far south as Lake Van—an enormous front for three army corps.

Both sides were tired out with the fighting in December and January, and for the first six months of 1915 neither side moved. In fact, Turkish officers used to come out and talk to Russian officers between the lines.

The British took on the brunt of the fighting against Turkey in Gallipoli, and undoubtedly saved the Caucasus from invasion and occupation.

Meanwhile, the Russian General Staff were raising troops in the Caucasus as best they could; but it must be remembered they had also to supply the wastage in the two Caucasus corps, and in the three Turkestan corps, which they had sent to the Russian main front. The Caucasus front was treated as a secondary theatre (as, of course, it was), and it was difficult to get men, or guns, or material of any kind to raise a new Army for that theatre.

The centre of the whole plan of operations in the Caucasus was the great fortress of Kars (which the Turks took in April, 1918, with 860 guns), on the Armenian tableland, something like 6,000 feet above the sea. It is famous in our own history for the wonderful defence put up against the Russians during the Crimean War by a Britisher, General Williams. Kars is the centre of a system of roads which radiate north-west to Olti, south-west to Sarikamish (the railway was completed just before the war), south-east to Kaghisman, the Alashkerd Valley and the Persian frontier (the railway to Persia branching south-east a little north of Kars at Alexandropol).

The II Turkestan Corps headquarters was at Olti. One had to travel from Kars by a little horse tramway for about 65 miles across the table-land to Merdanek, where one struck the high road running from Ardahan down into Olti, an old Turkish fortress on a river called the Olti-Chai, which runs into the Black Sea between Batoum and Trebizonde. This sector of the front lay in the broken, precipitous mountains between the Black Sea coast and the Armenian plateau.

There are very few trees, but plenty of water. The mountains run to a considerable height, sheer out of the valleys. For instance, while Olti itself lies in a cup not more than 1,500 feet above the sea, the Gei Dagh, the crest of which was held at this time by the II Turkestan Corps, is 10,000 feet high. It is hard to take much exercise at that height until you get used to it.

The trenches in this sector were nothing but breastworks of rock, sometimes built-up parapets of stone—the "sangars" of the North-West Frontier of India. The country generally is like the Indian frontier, except that in the Caucasus there is plenty of water.

The camp of the 23rd Turkestan Rifle Regiment at the foot of the Gei Dagh, and on the banks of a stream, reminded me of those at Ali Masjid, in the Tirah Expedition. The mountain battery in action worked like those on the North-West Frontier.

The dug-outs were mere caves, cut out by each man on the side of the mountain, and covered with his waterproof sheet.

The country south-west and south of Kars is not nearly so bare; there are even good pine forests at Sarikamish; it took many months to get them cleared of the Turkish dead, which lay in the woods some feet deep in snow after the fighting in the winter; plenty of fir trees here for the sleepers and wood-work of the railway, which was eventually pushed on west to Erzeroum.

The Russians are good at wood-work and improvising anything

that can be made of wood; they are used to it from childhood, *e.g.*, bridges on piles, where stone bridges had been destroyed by the Turks; rough, but very comfortable, winter quarters, wherever wood was available, *e.g.*, at Kara Kilissa, in the Alashkerd Valley, where the IV Army Corps Headquarters were. At the bridge over the Euphrates, thrown up quite close to the Kara Kilissa, the Russians used to keep a record of the rise in water level during the spring; this was telegraphed to British Headquarters in Mesopotamia, as the snow melted and swelled the little streams which form the head waters of the Euphrates. These caused floods in the lower reaches and gave our troops there endless trouble. In this respect our records in the country south of Urumia were more important, as *they* affected the Tigris; the water had less distance to go than in the case of the Euphrates, and the floods took only a few days to reach troops in the Amara area.

The country to the west and south of Kars is not so precipitous as the Olti region; the mountains rise less abruptly, although there are some fairly big drops. I remember the road from Bashker into Karakurt, where I was getting back late one night into camp with the 1st Cossack Cavalry Division; the driver was sleepy and mistook a goat track on the mountain side for the road itself, and instead of turning round the hair-pin corner, as he should have done, went straight on, and only just managed to pull up on the brink (where the low stone wall had fallen); we looked down in the moonlight at the rushing waters of the Arax quite a thousand feet below.

On the southern frontier of the Caucasus, between Russia and Turkish Armenia, is a big range which is crossed by two passes from north to south: the Akti Pass, in the centre of the range, which leads out of Russia into the Alashkert Valley; it was here that Khalil Bey (the Turkish General who took General Townshend at Kut) made a determined effort to break through into the Caucasus in July, 1915, but was beaten off. I spent some time in this valley with the 5th Caucasus Rifle Regiment, at Chilkhane, which was also the headquarters of the 2nd Caucasus Rifle Division, then commanded by an Armenian in the Russian service, General Nazarbekoff; I also met the 1st Tverskoi Dragoon Regiment, which, with the other three regiments of the Caucasus Cavalry Division, was at that time coming back across the Akti Pass into Russia for a rest on the north side of the range. The other pass is the Chingil at the east end of the range, where I met some Trans-Baikal Cossack artillery, with their little eleven-hand ponies, coming out from Igdir, one of the towns in Russian Armenia, on their way down to help the Armenians at Van. The range ends at Ararat, where the frontiers of Russia and Turkey and Persia meet. My impressions of Ararat are clear; I had plenty of time to form them—as my car sat in the stream at its foot from 3 in the afternoon, when a self-opinionated driver took me into it, until 9 o'clock that night (in the middle of rather unpleasant Kurd country). We were dragged out by horses which we got from the nearest post, some nine miles off.

Ararat rises 17,000 feet and more, sheer from the plain.

To return to the military situation. Up to the autumn of 1915 the Caucasus had contributed little to the Allied cause, except indeed with the good regular troops which she had sent up to the main Russian front. The brunt of the fighting against Turkey had been borne by the British in Gallipoli, the Sinai Peninsula, and in Mesopotamia. It was about this time that the big wireless station at Tiflis began to pick up snatches of conversation going on at the head of the Persian Gulf, between the skippers of our transports and the headquarter offices at Basra, and it was in the autumn of this year that connection between the operations in the Caucasus and in Mesopotamia became closer. For instance, Khalil Bey, finding that he could not break through into the Caucasus in July, left the Caucasus front with two divisions and appeared in the autumn on our front on the Tigris.

It began to be a busy time, too, for the Caucasus Army, as the Grand Duke Nicholas came down to take supreme command of the Caucasus front. He is a big man in every sense of the word, and he came to us with a tremendous reputation for " running amok " amongst Generals and others whom he found not up to the mark.

He at once saw the necessity for closer active co-operation with our own troops in Mesopotamia, and to do this he sent a force of cavalry, and all the infantry he could spare at the time—not very good material but the best he could spare—down into Persia *viâ* Enzeli, to Hamadan, so as to divert the attention of the Turks from the British front on the Tigris, and also to clear the north-west part of Persia of the German agents, who were carrying on fairly successful propaganda among the Persian gendarmerie and the Kurdish tribes on the western frontiers of Persia. This Russian Expeditionary Force was under the command of the G.O.C. 1st Caucasus Cossack Division, General Baratoff.

At the same time, the Grand Duke began to raise and train fresh troops, and to get guns and technical stores for his new divisions and army corps from Russia. In those days a Grand Duke could get things like guns and pontoons, railway material and so on, that a mere ordinary General could not get, however persistently he asked for them. The Grand Duke's arrival was a great thing for the Caucasus. Whatever difficulties there had been hitherto as regards interchange of military intelligence, they entirely disappeared when the Grand Duke made it known, in a marked way, that there were to be no difficulties.

A change, too, came over all ranks of the Caucasus Army; more energy was put into life generally. In fact, he introduced the " Rapid Solution " idea in every department.

All this was directed towards an assumption of the offensive by the Caucasus Army, which entirely took the Turks by surprise. About Russian Christmas Day (13 days later than ours) the Russians struck their first blow at the Turkish defences on the Hassan Kala line. The Turks put up a desperate fight for 14 days; the Russians lost a good many thousand men, but within a fortnight found themselves so

favourably placed that they laid siege to Erzeroum itself. No one, however, expected the fortress to fall for several months

Meanwhile Baratoff's force had reached Kazvin in Persia, and in January, 1916, I was ordered to run down to his headquarters, to see him and to instruct one of his staff in the use of certain ciphers, so that he could then communicate direct with our troops in Mesopotamia by telegraph and wireless. As the Russian advanced troops had reached Hamadan and were there in touch with the Turks, I ran on to Hamadan to see the situation. I shared a car with one of Baratoff's brigadiers, General Kolpachoff. We had to wait in Kazvin for some days until the snow drifts had been cleared from the road by the labour battalions, and on the road to Hamadan we actually dug out of a drift the General Commanding the Caucasus Cavalry Division, General Charpentier, who had not taken the precaution to carry spades with him in his car. While crossing the plain about four hours' journey from Hamadan, just after sunset, the tubes of our car froze, and it took some time to thaw them. The wind blew over that plain, at a height of over 6,000 feet, with an icy blast that went right through leather and fur "poshteen," British warm, leather-waistcoat and two flannel shirts.

At Hamadan the advanced posts were furnished by the 1st Uman Cossack Regiment, commanded by Colonel Yakovleff, who had been in charge of a section of the General Staff in Tiflis, and in whose room I had worked. It was from this regiment that a squadron was sent, a little later, across the mountains of Pushti Kuh, under Captain Gamalie, right through to the British Headquarters on the Tigris—a good ride, through bad country that provided practically no supplies; the squadron commander gained our Military Cross.

While at Hamadan we got news of the unexpected Russian successes at Hassan Kala, and of their advance towards Erzeroum, and, as my mission in Persia was over, I raced back the 800 miles to Tiflis (except for a night at Teheran to see our Minister) and reached Hassan Kala in time to join the Grand Duke and his Staff (which included General Yanuskevich, ex-chief of the Russian General Staff) as they left for Erzeroum.

I have vivid memories of this phase, mostly of the Grand Duke visiting the troops, congratulating them and spurring them on to the pursuit; for instance, at Ashkala, some 30 miles west of Erzeroum, where the Turks were then fighting a rear-guard action. On the road we passed thousands of Turkish and Kurdish prisoners being sent back to the rear.

The most vivid of these remembrances is of the Grand Duke—as imposing a figure as I have ever seen—speaking to his victorious troops as he passed down the lines standing in his car, the banner of St. George —the Russian Military Saint—with its black and gold stripes waving in the frosty air, and the men hurrahing as the bands played "God save the Czar."

Rather a pathetic picture, in the light of after-events. The men of the Caucasus Army, many of them, had only been in the ranks a few weeks; 85 per cent. of them unable to sign their own names, absolutely ignorant of what it was all about; 10 per cent. of them frost-bitten in hands or face or feet; their supply trains miles in rear, coming up through the passes in those mountains in the depth of winter, several feet deep in snow; hungry and tired, knowing next to nothing of what it all meant—but absolutely at the top of their form because the discipline to which they were accustomed had led them to success.

In this success, the stimulus imparted by the Grand Duke to the Staff in the first place, and to all the departments that he could touch with the spur, either personally or through his personal staff (who took it in turns to sit out there in the snow and watch and report to him how things were going)—that was the first factor.

The second was the brain of General Yudenich, who worked out this and the two successive bounds that followed, to Trebizonde and Erzinjan. Next the local knowledge of General Prjevalski, which enabled him to lead the II Turkestan Corps, night after night, by mountain paths, round the Turkish left flank, and then suddenly to sweep down upon Erzeroum from the north, almost out of the blue.

And last, but not least, was the leadership of the Russian officer. In whatever else Russian officers failed, they did not fail in physical courage and endurance. The Colonel of the 5th Caucasus Rifle Regiment led the way himself through places six feet deep in snow, wearing down a passage for his men in single file—and showing his subordinates how to do likewise—the leading men throwing their overcoats in front of them, trampling down the snow to a hard surface, and repeating the process step by step.

And yet political intoxication, a year or so later, broke down that fine machine; and a demoralised and renegade soldiery like frightened beasts, in fear of counter-revolution, turned on their officers, and in the name of liberty and freedom betrayed their Allies, giving way to war-weariness and skulking.

However, at the time their effort was magnificent, and it was only the supply difficulty which prevented the Grand Duke from pushing on straight west. But he had to feed the troops on his right and left; it could not all be done by the one road—and that not a railroad—in his centre at Erzeroum. He could not do much on his left (towards Lake Van), but he could and did decide to use the Black Sea Fleet, and by taking the Port of Trebizonde open up a new route—the sea road—from Batoum and from the Crimea to feed his army. In taking Trebizonde, too, he gained another good metalled road, which still further improved his supply arrangements; and gained some 40 miles of Turkish Decauville railway, inland from Trebizonde.

After his victory at Erzeroum the Grand Duke was able to press for some troops from the main theatre, and he got them. Two divisions

—not very good ones—not nearly so good as the II and III Caucasus Army Corps, which had been sent to the main front a year and a half before—were sent to the coast near Trebizonde by sea. A wire to our senior naval officer at Supreme Headquarters (Admiral Phillimore) enabled him to watch the embarkation of this new army corps (the V Caucasus A.C.) in the Crimea, and its debarkation on the Turkish coast. The actual operations against Trebizonde were in charge of General Liakhoff, one of the forward school among Russian frontier soldiers, a man with great force of character.

I accompanied Admiral Phillimore to Trebizonde in a Russian transport at night, from Batoum, convoyed by two torpedo boats.

General Liakhoff took us round his forward positions, was very hospitable, and installed us in a Turkish palace.

The next visit I made to Trebizonde was by land from Erzeroum *viâ* Baiburt; this was on a big tour of the main Caucasus front (including Erzinjan) which the Grand Duke made at the end of July. General Yudenich had consolidated his positions on the line Trebizonde–Erzeroum, and now felt that his supply arrangements were ready for him to push forward his centre to Erzinjan. This was his third bound, each bound of about 100 miles in length—an extraordinary performance in country like this. There was a good deal of fighting, the severest taking place south and south-east of Trebizonde, where the II Turkestan Corps line joined the new V Corps line, and where the Turks put up a very good fight for a month. The Russian casualties were high. For instance, if a regiment (four battalions of 1,000 men each) lost less than one quarter of its strength in any particular engagement, it was considered to have done badly.

On this tour we started by motor from Sarikamish; I shared a car with General Marquis de la Guiche, the senior French representative at that time in Russia; we covered 840 miles in eight days—a record for that part of the world, where the only metalled roads had had nearly two years' wear with very little real repair, and where roads were generally not metalled. The main road passes through Erzeroum.

The Grand Duke generally started before six every morning, when you gulped down a glass of boiling weak tea, and—if you were lucky—a hunch of bread and a hard-boiled egg; you had to last on that till you got in, often not till 6 p.m., when you had an enormous meal—one can imagine the sort of meal an Army Corps Commander in the Orient will put on the table for an autocrat Commander-in-Chief. There were about five cars, and each car burst about six tyres a day (bad roads, over-inflation, changes of altitude and temperature every few hours, and bad rubber from Riga).

We did not stay long in Erzeroum, as the Grand Duke was anxious to push on to Trebizonde; he had never been allowed to go by sea because the danger from floating mines and submarines was not well in hand. On the way we stayed a night at Baiburt, the headquarters of the II Turkestan Corps under General Prjevalski. The road between

Baiburt and Trebizonde has, surely, the finest scenery in the world. I have been in the Bavarian Alps and in the Himalayas, and through the main Caucasus range by the Georgian military road, but I never saw anything like the varied scenery on this bit of road. It is extraordinarily interesting historically, too, as it is the road by which Xenophon and his 10,000 Greeks returned; it was on the heights above Trebizonde that the Greeks first saw the sea after many months and shouted "Thalassa, Thalassa!" There are old Byzantine castles and bridges still standing; you see them some distance off the road, bridging chasms it is true, but apparently leading from nowhere to nowhere, sometimes leading to the foot of an impossible slope. The surface of the country has probably changed in these hundreds of years, but the bricks and mortar arches still keep their shape.

At Trebizonde, the Grand Duke went out to inspect the new lines of fortification which General Schwartz, the famous Russian military engineer, was then throwing up round Trebizonde—7 or 8 miles to west and south-west of the port. We also inspected some old batteries on Boz Tepe (old Krupp 6-in. guns) and some new shore batteries near Trebizonde at sea level.

The Greek Archbishop entertained us, and sent guides with us to the various ancient churches, some of which had been turned into Turkish mosques (like St. Sofia at Constantinople), and were now to be re-converted into Orthodox churches. This specially appealed to the Russians, whose doctrine is practically the same as that of the Greek Church.

From Trebizonde we returned to Baiburt and from there we went by cross-country tracks to Erzinjan; it was on this bit of the journey that we passed the 16th Turkestan Rifle Regiment, which the Grand Duke inspected; it was to this regiment, which had lost about 900 men in the last fight, that he said, "You must do better next time." They replied in unison, as is the Russian custom—they learn as recruits the stereotyped phrases to suit every such occasion: "We will try, your Imperial Highness."

Just before reaching Erzinjan, the track winds down the side of a big range; it is not a proper motor road, and the outer wheels of our cars were about an inch and a half over the edge in places; we had to take these places at good speed so as not to slip over the edge. An absolute fact! The officer who reconnoitred it afterwards for the British naval cars told me he walked that bit, and absolutely condemned it as a possible route for his squadron, which therefore never went to Erzinjan.

The Grand Duke inspected the British naval armoured cars under Commander Locker-Lampson, at Sarikamish, a few days later. They did good work in the direction of Mush towards Lake Van, but the roads, or rather the absence of roads, prevented their being used on the main Caucasus front, and we saw very little of them. They must have picked up a lot of experience in their three months in the Caucasus;

their march from Vladikavkaz by road, *viâ* Tiflis and Kars, was a good effort, apart from what they did in the fighting line.

We got back from Tiflis from that tour thoroughly tired, with hard going and jolting, hot sun, the procession of cars churning up dust for hours, day after day—and every one of the Grand Duke's Staff was knocked up with fever of one kind or another. One got enteric, two or three dysentery; I chose a complaint called infected colitis; the Grand Duke was the only one who did not go to bed, although his surgeon, who looked after me, told me he had fever for several days.

At the end of 1916 I came home—the first leave I had had for six years; and in the middle of March, 1917, as the Revolution started in Russia, I left England again for Tiflis, expecting to find the Grand Duke still there—in fact, I had all sorts of inspiriting messages for him from France (where I had been allowed to spend a short time). I had difficulty in getting away by rail from Petrograd at all; I was to have travelled down one night with a King's Messenger, who was going to Persia. He, poor man, met me at the entrance of the station in a very heated and dishevelled condition, and told me that thousands of soldiers had taken possession of the mail train, and were going on leave; he had with much difficulty got into his *coupé* with his courier's bags, and found that the two berths were occupied by ten sailors and soldiers, who welcomed him warmly—being a Britisher—but as the *eleventh* passenger. It took him half an hour to get out again—and he never succeeded in getting two of his bags. The train went off with soldiers in the corridors, three deep; on the roofs, clinging to the couplings, on the steps; hanging on anywhere like flies.

Eventually it was only by going with our Military Attaché to General Korniloff, who was then Governor of Petrograd, that I got seats a few days afterwards. Order was restored—not by force, but by civilians with revolutionary arm-brassards (and rifles), who managed the soldiers extraordinarily well.

Once out of Petrograd, we had very little trouble, and the country seemed quieter and more orderly as we went south; in fact, I found the Caucasus much as I had left it, except that the Grand Duke's flag over the palace at Tiflis was no longer there, and a big, ragged, red flag was in its place—the palace itself occupied by the five Commissioners of the Provisional Government, side by side with the Soviet, or Council of Soldiers' and Workmen's Deputies.

The notorious Army Order No. 1, which was issued at the beginning of the Revolution—about 16th March—telling them that they now had political rights equal with those of their officers, and therefore need no longer salute them, was issued, not by the responsible War Minister, Gutchkoff, or any Member of the Provisional Government, but by the Soviet or Council of Soldiers' and Workmen's Deputies—a revolutionary organisation which, from the first, insisted on acting as a kind of check on the Provisional Government, distrusted it as being drawn from the educated classes, and overthrew it later in the year.

The political agitation carried on by these Councils, which were formed in every unit in the army and navy, from the company and battalion up to the army corps and Army, destroyed discipline in Russia—a discipline founded on the German model, but not strictly enforced—a discipline that made no appeal to reason or intelligence; 85 per cent. of the men had no kind of education at all, no sense of civic responsibility, no stake in the country.

It made no appeal to patriotism. I have often heard Armenians say, " Why should we fight on the Polish front? It's all the same to us if the Germans take Poland, so long as they don't take Armenia." Education and patriotism together could alone unite a huge heterogeneous collection of states and races like Russia to fight together in a common cause.

This discipline of theirs appealed only to an unquestioning faith in the Czar and an autocratic Government, and, so long as that Government and its officers led them to victory, well and good.

But when scandal befouled the Court itself, and vile agents circulated millions of photographs of the notorious Rasputin, and viler stories with them, and when the credulous peasant-soldiers heard that the Czar had been dethroned—in fact, when their earthly God had been smashed, where were they to look for guidance?

Many units had had their casualties replaced eight and ten times; the men were weary to death of war; they were poorly fed, not paid at all (unless you call 8*d.* per month pay), let down time after time through bad organisation, embezzlement and swindling in high places; and the new political agitation by the Soviets was allowed to work freely on this enfeebled temperament.

When the Grand Duke was enveigled away from the Caucasus by a trick, intrigues began, slackness started again, and every shirker joined the Soviets and shouted " Peace without annexations and contributions!"—90 per cent. of them not knowing what those long words meant, except that they could now loaf, dressed as soldiers, but no longer bound to fight, drawing good rations, and able to insult, plunder and even kill anyone with a clean collar and property worth taking.

The Russian officer-class did all they could to bring the men to their senses; they led them into action, and when the battalion-Soviets refused to follow, they went on by themselves, and in hundreds of cases died in the field, rather than join in the demoralised retirement that began to be general along the Russian front.

This demoralisation was felt less acutely in the first instance on the Caucasus front. Here about one-fifth of the troops were Cossacks, and perhaps another fifth Armenians and Georgians, all with some interest at stake in defending their own frontiers, and keeping what they had won from the Turk.

But the evil gradually spread; railways in rear began to get disorganised; labourers could not be found to unload ships bringing

grain to Batoum; food supplies at the front began to get short; the troops at the front went into hospital by thousands with scurvy owing to poor nourishment, and from the first month of my last year in the Caucasus it was obvious that there was very little heart left in the Caucasus Army, and very little hope, in spite of all their promises, of effective co-operation in the field with our troops in Mesopotamia.

I went down to Tabriz in May, 1917, and later on across Lake Urumia, with the new commander of the VII Caucasus Corps, General Prince Vadbolski. He asked me to speak to the men of the 4th Kuban Cossack Division, and tell them of General Maude's brilliant advance to Baghdad. They listened respectfully and even enthusiastically, but as they marched past in column of route it was clear they were not for any more serious fighting; they looked like men who had just come off a long bout of drinking, and yet they had had no liquor for three years.

Their *morale* was gone; they thought of nothing but "meetings" and politics generally. It was after this trip that I became convinced that we could expect no more from our Russian Allies; the push that Vadbolski tried to put in at Sulemanie in July proved it; the wretched Armenians (two battalions of them) who got into Penjvin were driven out by the Turks and practically cut to pieces; they were supported by Cossacks, but feebly (the Cossack is a very light form of mounted infantry, and useless against infantry); and the 66th Division, recently brought down to this sector after several months' rest, absolutely refused to fight.

And so it went from bad to worse; one by one the senior commanders found their positions impossible. Goaded by impossible orders from Supreme Headquarters, but given nothing in the way of transport; always handicapped by the decreasing production of supplies, and checked at every turn by the Commissaries (or representatives of the Soviets), who sat at their elbows to see that they did not bolt with the contents of the till, or take any aggressive action that might irritate the enemy—it was more than they could stand, and General Yudenich retired from the Caucasus Command in August. His successor, General Prjevalski, found the same difficulties. As time went on, it became increasingly clear to our War Office and to the Government that it was a farce having agents in Russia for *liaison* work: there was nothing and no one in a responsible position to work upon.

On the way home I was held up for some time at Petrograd by the Bolsheviks, who seemed sorry to lose us. The journey that I had done the year before in 14 days took six weeks.

THE DILLON REGIMENT.

By Luke Gerald Dillon.

By an Order dated at Saint-Denis, February 15th, 1920, the "87e Régiment d'Infanterie" was disbanded, "après 230 ans d'une existence glorieuse, toute d'honneur militaire et de dévouement au pays." A few notes regarding this very distinguished regiment and some of its Colonels may be of interest.

The famous Dillon Regiment was raised in Ireland, June 20th, 1653, by the Hon. Sir James Dillon (8th son of the 1st Viscount Dillon), a Royalist, and a General in the French Army. After serving against Cromwell it embarked for France, and joined the army under Turenne, operating against the Prince de Condé, when it particularly distinguished itself at the forcing of the lines of Arras (1654), at the battle of the Dunes (1658), and the siege of Dunkirk (1660). The regiment was disbanded 29th February, 1664.

In 1668 the regiment was reformed in two battalions of 1,500 men each (recruited on the Dillon estates in Mayo and Roscommon) by Theobald, seventh Viscount Dillon, Lt.-Colonel of James II.'s Irish Guards, who was killed at the battle of Aughrim (July 12th, 1691). Lord Dillon conferred the colonelship on his second son, the Hon. Arthur Dillon, then 20 years of age, who took the second battalion to France in 1690 in the service of Louis XIV., and thus became the first "Colonel Propriétaire du Régiment de Dillon." The command of the first battalion he gave to his eldest son, Henry, who was to succeed him as eighth Viscount. Having served against William III. at the battle of Boyne, at Aughrim and at Limerick, it joined the second battalion and was among the troops reviewed by James II. at Vannes in 1692.

This corps took precedence of the other regiments of the Irish Brigade owing to its priority in entering France; it enjoyed the almost unique distinction in the French Army of never having its name changed, and for over 100 years it was always commanded by a member of the family by whom it was originally raised. Recruits for "Dillon's" and the other Irish regiments were known as the Wild Geese. They are referred to in the following extract from Kipling's charming poem, written especially for the Irish Guards:—

> "Old days; the wildgeese are flighting
> Head to the storm as they faced it before,
> For where there are Irish, there's loving and fighting;
> And when we stop either, it's Ireland no more."

The first "Colonel Propriétaire" led his gallant Irishmen with distinction under Catinat, the Duke of Noailles, Villroy, Médavi, Tessé,

the Duke of Orleans, and Berwick. He was at the siege of Urgel in 1691, and in 1694 at the captures of Palamos, Ostalrie, and Castelfollit. In 1696 he was at the defeat of the Spanish Cavalry under the Prince of Hesse-Darmstadt by Vendôme, and in 1697 at the capture of Barcelona by the same illustrious general, on this occasion "Dillon's" occupied the trenches right and left of the battery, and so gallantly foiled all attempts of the Spaniards to storm the position that the regiment was publicly congratulated by Vendôme, and left to garrison the town, to the capture of which their valour had so largely contributed. At Cremona (1702) the regiments of Dillon and Burke held the Po gate, where, according to a French General Officer, they performed "incomprehensible things;" and Forman writes: "Had they done nothing else, this one action alone would have been sufficient to eternise them." The illustrious General Pelet alludes to the two regiments as "where all were brave, the bravest of the brave." For their services on this occasion Louis XIV. rewarded "Dillon's" with a large gratuity and raised the pay of Burke's. After the battle of Cassano (1705), Vendôme wrote to Louis XIV. that the Irish had fought with exemplary valour and that they formed a band whose devotion might be relied upon in the most difficult emergencies of war. As a reward for the brilliant part played by "Dillon's" the King added two senior Lieutenants to each company. In 1707 Arthur Dillon eminently contributed to the disastrous result of the great expedition against Toulon under Prince Eugène aided by Admiral Sir Cloudesley Shovel; and in 1712 he accompanied the Duke of Berwick as one of his five Lt.-Generals on the expedition into Catalonia for the relief of Gerona. He is represented to have been a gallant officer, beloved by his soldiers, handsome in person, and very fortunate, never having been wounded notwithstanding the dangers to which he had been exposed. After the battle of Castiglione (1706), where he commanded the French left, Médavi wrote of him to Louis XIV.: "He is a foreigner of merit and of valour, who on all occasions has served your Majesty well." He died in 1733 in the Palace of St. Germain, having been created Count Dillon by Louis XIV. (1711), and K.T. (1715), Baron and Viscount (1717) and Earl Dillon (1721) by the Old Pretender. It was to him that all the documents in the possession of Queen Mary, widow of James II., were confided at her death in 1718.

Arthur Dillon was succeeded by his eldest son, whose name had been in the rolls of the regiment from his fourth year. This was Charles who became tenth Viscount, and commanded his Irishmen on the Rhine in 1734 against the Germans, assisting in 1735 to cover the retreat of the French Army from Germany under the Marquis d'Asfild. He died in 1741, when the Colonelcy devolved on his next brother, Henry, the eleventh Viscount, who had served in his father's regiment from the age of ten, and had been present at the siege of Philipsburg and the affairs of Ettingen (1734) and Clausen. After the battle of Dettingen (1743) (where he was present as Brigadier), the English became principals in the war against Louis XV., and having regard to the probable confisca-

tion of his estates if he remained in the service of the French King, he quitted France (on the advice of Louis XV.) in the spring of 1744, and subsequently (26th October, 1744) married Lady Charlotte Lee, of Ditchley, Oxfordshire, eldest daughter and eventual co-heiress of George Henry, second Earl of Litchfield.

When about to leave France, Lord Dillon gave the command of the Regiment to his next brother, the Chevalier James Dillon, Knight of Malta, who fell at its head in the hour of victory at Fontenoy (1745), during the famous charge which succeeded at the last in breaking "la fameuse colonne Anglais," which up to that moment had been found invincible. A French writer states that at Fontenoy "Dillon's" covered itself with glory, and decided the day by a furious onslaught in the English line. The result to the French of this important victory was the surrender of Tournai and the capture of Ghent, Bruges, Oudenarde, Nieuport and Ath, in all of which the regiment took part. Among the spoils captured at Ghent was a large quantity of new clothing for the English regiments, which, by order of the King, on the suggestion of Saxe, was distributed gratis to the Irish, an incident referred to by Kipling in the following lines:—

"The fashion's all for khaki now,
But once through France we went;
Full-dressed in scarlet army cloth,
The English—left at Ghent."

When James Dillon fell at Fontenoy, the French King, on the field of battle, gave the colonelship to the fourth brother, Count Edward Dillon, referred to by Voltaire as, "le Colonel Dillon, nom célèbre dans les troupes Irlandaises." The new colonel did not long survive his promotion, as he fell mortally wounded at Laufeldt (1747).

After the death of Edward Dillon, no son of Count Arthur Dillon remained in France except the fifth, Arthur, the celebrated Archbishop of Narbonne, and President of the States of Languedoc, who, being in holy Orders, was not available for military service. He is described as a learned prelate, endowed with much "courtly readiness of tongue;" and it is related that one day, in a moment of temper, referring to the Irish troops, then quartered in Paris, Louis XV. said, "I hear, M. l'Abbé, that the men of your brother's regiment give a good deal of trouble;" to which he replied: "So do I, sire; I am told that your Majesty's enemies always find them inconveniently so." I have been informed that with reference to this incident a distinguished author has written the following lines:—

"Said the King to the colonel,
The complaints are eternal,
That you Irish give more trouble
Than any other corps;
Said the colonel to the King,
This complaint's no new thing,
Sire, your enemies have said it
A hundred times before."

The only son of General Dillon then in France, being thus debarred from military service, there was no lack of candidates for the command of such a gallant corps, and Louis XV. was earnestly solicited to give away the regiment on the plea that there was no Dillon to claim it. The French King replied: "Lord Dillon is married and I cannot consent to see that a proprietorship, cemented by so many good services and so much blood, should go out of a family so long as I may entertain a hope of witnessing its renewal." The proprietorship of the regiment was, consequently, allowed to remain with Henry, the eleventh Viscount, who, though resident in England, managed the affairs of the Corps for 20 years, when, by a commission of Louis XV., dated 15th August, 1767, his second son, the Hon. Arthur Dillon, became, at the age of 17, sixth colonel of the regiment.

The new colonel had a distinguished military career. In the American War of Independence he played a conspicuous part in the taking of Grenada, St. Eustace, Tobago and St. Christopher (of which he was appointed Governor). When France was invaded by the Prussians and Austrians in 1792, he shared with Dumouriez the honour of the successful operations in the Forest of Argonne and, pursuing the retreating enemy, retook the town of Verdun, so gloriously held by France during the late war. In 1793 he was appointed to command the army of the Rhine; but, being denounced as a Royalist, was summoned to Paris, where he was executed, 14th April, 1794. When beckoned by Sanson, he mounted the scaffold and called out "Vive le Roi!" Thus went to his account the last "Colonel Propriétaire du Régiment de Dillon." His name is engraved on the Arc de Triomphe, among the glories of France. By his second wife he had two daughters, one of whom, Fanny, married Napoleon's general and staunch friend, Comte Bertrand. She and her husband accompanied the Emperor to St. Helena and remained with him until his death.

In 1793 the first battalion was quartered at Lille and became the 87e Régiment d'Infanterie. The second battalion was at San Domingo, and on 22nd September in that year capitulated to Commander Ford. R.N.

On 1st October, 1794, it was taken on to the strength of the British army and described as "a regiment of foot, part of the Irish Brigade," the command being given to the Hon. Arthur Dillon, brother of the last Colonel Propriétaire. It was disbanded in 1798.

During the European War the 87e Régiment d'Infanterie added fresh laurels to its already glorious history under the command of Colonel Rauscher and Colonel P. A. Cour ("le dernier Lt.-Colonel Commandant du 87e R. I."); it was especially distinguished at the battle of the Marne, on the Somme, and at Verdun, and 3,000 men (officiers, sous-officiers, caporaux, et soldats) laid down their lives *pour la France et pour la liberté.*

The colours of "Dillon's" were six and a half feet square, and displayed a red cross edged with white, two corner spaces black, and

two red, disposed diagonally, with an imperial crown (gilt) on each. On the centre of the cross a harp, surmounted by an imperial crown (both gilt), and on its arms the words, " In hoc signo vinces " (gilt).

The colours of the second battalion are now at Ditchley.

With regard to the dress of the regiment, I possess some old coloured French prints of uniforms, which pourtray an officer in 1724, wearing the three-cornered hat; with gold binding and black cockade, a long scarlet frock coat, with wide black turned-back cuffs and gilt buttons; the coat is open in front, showing a scarlet waistcoat, gilt gorget, ruffles and cravat. The stockings are scarlet, with yellow garters, and the shoes high with gilt buckles. His gloves are yellow.

A soldier of the same period is depicted wearing a similarly cut scarlet coat, with black cuffs and black turned-down collar, black waistcoat, red stockings, yellow garters, and high flapped shoes. He does not wear a gorget, a cravat or ruffles. The Officer wears a sword, and carries a pike; the soldier wears a sword and carries a musket.

Among the distinguished soldiers who served in " Dillon's " I may mention Robert Dillon (son of Patrick Dillon of Taughmore, co. Roscommon), ninth Earl of Roscommon, a Marshal of France, who, on the death of Count Rothe (1766), was appointed to command that gallant General's regiment, which then became the " Régiment de Roscommon." General Count Lally, the brave but unfortunate defender of Pondicherry, on whom Saxe pronounced the following eulogium : " One may sleep in peace if Lally faces the foe." Also Marshal MacDonald, Duke of Tarentum, who states in his " Recollections " : " Count Arthur Dillon, who fell a victim to the Revolution after having served it loyally, offered me a cadetship in the regiment that bore his name and of which he was proprietary colonel."

In June, 1795, Colonel Edward Dillon (" le beau Dillon ") raised in Ireland for the British Crown, " Dillon's Regiment," which he commanded until 1812, when it was disbanded. While the men were all Irish, many of the officers were French. The regiment served in the expedition to Egypt in 1801 under Sir Ralph Abercrombie, where it was known as " Dillon's Emigrés."

In 1806, Henry, thirteenth Viscount Dillon, raised on his estates a regiment which he commanded. This was not a " Dillon Regiment." It was called the " Duke of York's Irish Regiment of Foot," numbered 101st, and was disbanded after Waterloo.

CHARTING OF THE UPPER AIR.

By COMMANDER L. G. GARBETT, R.N. (Retd.),
Superintendent Navy Services Division (Meteorological Office, Air Ministry).

IN the days of sailing ships, the details of the meteorology of the sea were of the first importance to all mariners, and international co-operation made it possible to draw charts of the winds and currents of the ocean. The information on these charts was of such practical value to the seaman that he was glad to contribute the data, and so the observations came to be included in the daily routine of the ship.

With the introduction of steam, however, meteorology ceased to be the all-important science controlling the strategy of movement, ships were dependent to a lesser degree on the direction of the winds, and the interest in the weather elements became less. In consequence the meteorological survey of the world remains incomplete.

But recent years having brought about an increase of speed and size of ships, a rapid development of scientific instruments of war both on land and sea, and a steady advance in aircraft construction, the meteorological elements have to be considered as much as ever before as factors influencing the conduct of wars. Thus we find that meteorology to-day has resumed its old importance, and information concerning weather conditions is again a necessity, but now not only on the surface but in the upper layers of the atmosphere as well.

Important as an accurate knowledge of the weather conditions may be to those on sea and to those on land, to the navigator of the air it is vital. The immense value of aircraft is now universally accepted and none of the fighting services can neglect aircraft problems.

The future of airships is still uncertain, but the support which is being accorded by the Government to their development emphasises the importance of this means of transport, and if it can be demonstrated that they can hold the air under all conditions of weather, there is little doubt that they will be of real importance to the Navy and in future wars would greatly assist in protecting the sea and air routes of the Empire.

The recent news of the loss of the United States airship "Shenandoah" in a line squall, will no doubt raise again the question as to the future of the large rigid airship. Hasty conclusions should, however, not be drawn, for if, as has been suggested, it turns out that the accident was due to the reduction of the number of valves in the gas bags below a known safe limit, to accommodate the expansion of gas when the ship is lifted in an up current, then the accident affords no fresh argument against the development of such craft. On the other

hand, if it is suggested that the weather organisation was at fault, it can be said that the weather charts constructed in the Weather Bureau, Washington, copies of which have now reached this country, show clearly the line of thunderstorms along the trough of the depression into which the ship ran, and further show the progress of the same depression from west to east across the States during two whole days prior to the disaster. There is, therefore, proof that the vital information as to weather conditions was actually in existence and if the voyage had to be made it seems to have been a case for a wide detour.

Much has been written on the subject of aircraft development, but few writers, I think, have emphasised sufficiently the importance of meteorology, which indeed is the dominating factor in Air Navigation. This is clearly shown in the case of the "Shenandoah" and was also brought out recently when the R.33 broke away from her mooring mast. On this occasion the weather reports provided to the airship staff by the Meteorological Office played a vital part in the decisions which were made regarding the manœuvring of the ship.

There is an essential difference between a ship at sea and an airship—in that a ship has no choice but to face the meteorological conditions as they occur at the surface, whereas an airship at any time has not only the choice of height at which to fly and in consequence a choice of meteorological conditions, but, what is more important, can be made to have a sufficiently great air speed to navigate round areas of bad weather which are themselves travelling, and may often be able to outdistance them.

In considering aircraft navigation it is necessary to realise the fact that the wind does not move like a solid all the way from the earth's surface to the top of the atmosphere. The wind changes in speed and direction as we go upward and it is only on very rare occasions that these changes are negligible. At times the changes with heights are very considerable, depending very largely on the horizontal distribution of temperature over the earth's surface. For instance, on the average the wind tends to veer through two or three points and to increase in speed in the first 1,500 feet–2,000 feet. The general rule, at least in our own latitudes, may be said to be that a westerly wind will continue to increase with height, whereas an easterly wind increases in the bottom 3,000 feet and then decreases.

It is not an infrequent occurrence that the wind, say, at 20,000 feet is in the opposite direction to that at the ground, and occasions have been noted when in going from the ground to higher levels the wind has more than boxed the compass. In the region of the Trade winds, there is a complete reversal of Trade—this counter Trade is sometimes found as low as 6,000 feet and at others as high as 30,000 feet. In northern India the N.E. monsoon is known to be very shallow with a westerly wind above it, whilst in southern India it is deep; the height of transition varying each day. The Mediterranean, too, is an area where the upper circulation is essentially different from the lower wind circulation. In Egypt we know that the familiar north and

north east winds of the summer give place at higher levels to a definite westerly current. It is likely that over the sea, for example, in the western Mediterranean the winds at a height tend to take up a definite direction from the west or the north west, in many cases regardless of what the winds are at the surface.

From the foregoing remarks it will be realised how important the knowledge of the general circulation of the atmosphere is, not only to the air navigator but to the gunner, both on land and sea. The effect of such changes of wind in the path of a projectile deserves consideration, for during a trajectory reaching a height of 20,000 feet the projectile must pass through layers of winds varying widely in both direction and force. For a 6-inch Mark VII, gun fired at a range of 11,300 yards the error for range for a wind following at 30 miles per hour would be 360 yards. These differences can, of course, only be allowed for if observations of winds at all heights attained by the shell are available.

A great advance has been made in the last 20 years in the systematic observations of the upper winds over the land by nearly all the Meteorological Services of the world and as a result we can form an idea of the circulation of the atmosphere up to high levels over the continents; but the knowledge is incomplete without more observations of winds over the sea and these can only be obtained by the co-operation of those who go down to the sea in ships. This information is now more than ever necessary in view of the opening up of air routes in all parts of the world.

The advance of long distance aviation demands accurate informa tion of the winds in those regions for which no observations are available; and on air reconnaissance flights the importance of a know ledge of the meteorological conditions at different heights is essential Airships, in order to be able to keep the air as required, must be supplied with all the meteorological information available, so that they may select the route best suited to them at the time, both on account of economy of fuel, by utilising the most favourable (or least unfavourable) wind, and on account of the necessity of avoiding dangerous or undesirable phenomena—in particular thunderstorms. These should be circumnavigated, not only because of the possible danger from lightning but also owing to the very disturbed and turbulent state of the atmosphere in their vicinity.

To meet these requirements daily charts of the wind and weather over the route to be traversed must be prepared from observations received by W/T, but, in addition to this, complete charts of the mean winds at the different layers are absolutely necessary, and as the information contained in the surface wind and current charts of the ocean was of practical value to the seamen, so also will information contained in charts of winds at the different layers be of the utmost value to the fighting services, ashore, afloat and in the air.

But charts of winds are not all that is required—a knowledge of the temperature at the various levels under different conditions is also of

considerable importance, especially to airships. On an average the temperature decreases with height at the rate of 1° F. for every 300 feet; but this is not always the case as under certain conditions there may be an increase of temperature with height; this is known as an inversion. Under such conditions it is said to be possible for an airship to "sit" in the top of an inversion with practically all engines stopped. Without charts laying out in detail the atmospheric conditions at various levels, the airman must work in the dark; but under normal conditions, with charts to refer to and an adequate meteorological service at his disposal to give him frequent reports he should be able to accommodate himself to the conditions, choosing his own route and navigating the air in safety and comfort.

That abnormal conditions will be met from time to time is undoubted and the air navigator must gain his experience as the seaman has gained his, but the careful investigation and study of the meteorological elements and their causes in the upper layers of the atmosphere will go a long way in helping him to weather in safety any perils he may encounter.

But how and when can such charts be prepared? There is little doubt that the Meteorological Office is fully alive to the importance of upper air observations and, as I have already stated, systematic observations of winds in the upper air and, in some cases temperatures, are being carried out by nearly all the Meteorological Services of the world.

The Air Ministry has its meteorological sub-establishments at many of the aerodromes in this country, and also in Iraq, Egypt and Malta, where research work is being carried out and special attention devoted to the meteorological requirements of the squadrons attached to them. A special section has now been started at Headquarters which will confine itself to the study of airship meteorology and is already engaged in overhauling all upper air data available from all countries with a view to the production of charts of the upper winds up to a height of 10,000 feet.

But what about the sea, and how are observations to be obtained in order to complete the picture of the circulation of the winds of the globe? For this we have to rely on the co-operation of the sea services and on private enterprise. The special advantage of H.M. ships over the ships of the Mercantile Marine for this work is that the merchant steamer has at all times to make the speediest passage possible from port to port and the sacrifice of time is contrary to the fundamental principle of a cargo or passenger steamer; but the Navy, without serious sacrifice, may, it is hoped, be able to co-operate in this meteorological study, which is of the greatest interest and importance to the Naval Service.

It is obvious that observations from ships at sea present greater difficulties than those on shore, but certain forms of observations have already been proved to be practicable: one is the observation of the travel of a pilot balloon by means of a sextant and compass. The balloon is of india-rubber and inflated by hydrogen and released from the ship. It travels upwards at the same time as it is being carried along

in the horizontal stream of air in which it finds itself. Its rate of ascent depends upon its weight and its free lift, which must be determined before the ascent begins—a normal rate of ascent is 700 ft. per min., so its height can be approximately known at any time by noting the number of minutes that have elapsed since the time of starting. The altitude and azimuth are obtained by means of a sextant and compass and from data obtained in this way the velocity and direction of the horizontal current are found at any time.

Some such observations have already been carried out from H.M. ships. In 1922–23 excellent pilot balloon observations were obtained from H.M.S. "Mutine" in the West Indies. Observations in this region are of particular interest, for it is possible that they may give a clear indication of the conditions which favour the formation of hurricanes before surface observations show any abnormality. In 1924 experiments were carried out over the English Channel from H.M.S. "Kellett," and on one occasion it was found that a westerly wind blowing at 4 m.p.h. on the surface had veered 9 points at 3,000 feet and increased its velocity to 40 m.p.h. More recently H.M.S. "Repulse" has made upper air observations of this kind in the Atlantic with most interesting results.

Shell burst observations have also been carried out over the sea, but in this case the wind at one particular height only can be obtained for each burst.

Another form of observation is that of Sounding Balloons, by which observations of temperature are obtained. The balloons are of larger size than those used in pilot balloon observations. They are sent up in pairs in tandem and carry a self-recording instrument which gives the temperature in relation to the pressure. The balloons are followed by the ship as long as they are in sight and an estimate of where they are likely to fall is made. On attaining a great height, say, 40,000 feet or 50,000 feet, one of the balloons will burst, the remaining balloon, being unable to support both the instrument and a float which is attached, descends until the float reaches the water. The balloon is now able to support the instrument some feet above the surface of the water until recovered by the ship which has followed it. The balloons take about an hour to go up and an hour to come down.

The problem of obtaining fuller knowledge of the general circulation of the atmosphere is not merely of academic interest, for an immediate and direct advantage to the Navy would be derived from observations of air currents with pilot balloons over the sea, and they would be indispensable for artillery and air work in offensive operations. The application of the observations of temperature up to the heights of the trajectories of projectiles is equally necessary. For the observations beyond that range the application is at present indirect, but its immediate effect is to enhance the value of all the surface observations by bringing them into relation with the upper air. Finally it is hoped that a further knowledge of what is going on in the upper layers of the atmosphere may lead to greater accuracy in forecasting.

MODERN FINLAND.

By MAJOR-GENERAL W. M. ST. G. KIRKE, C.B., C.M.G., *p.s.c*

On Wednesday, 1st April, 1925, at 3 p.m

General SIR GEORGE MILNE, G.C.M.G., A.D.C., in the Chair.

THE CHAIRMAN introduced the Lecturer.

LECTURE.

1. PAST HISTORY.

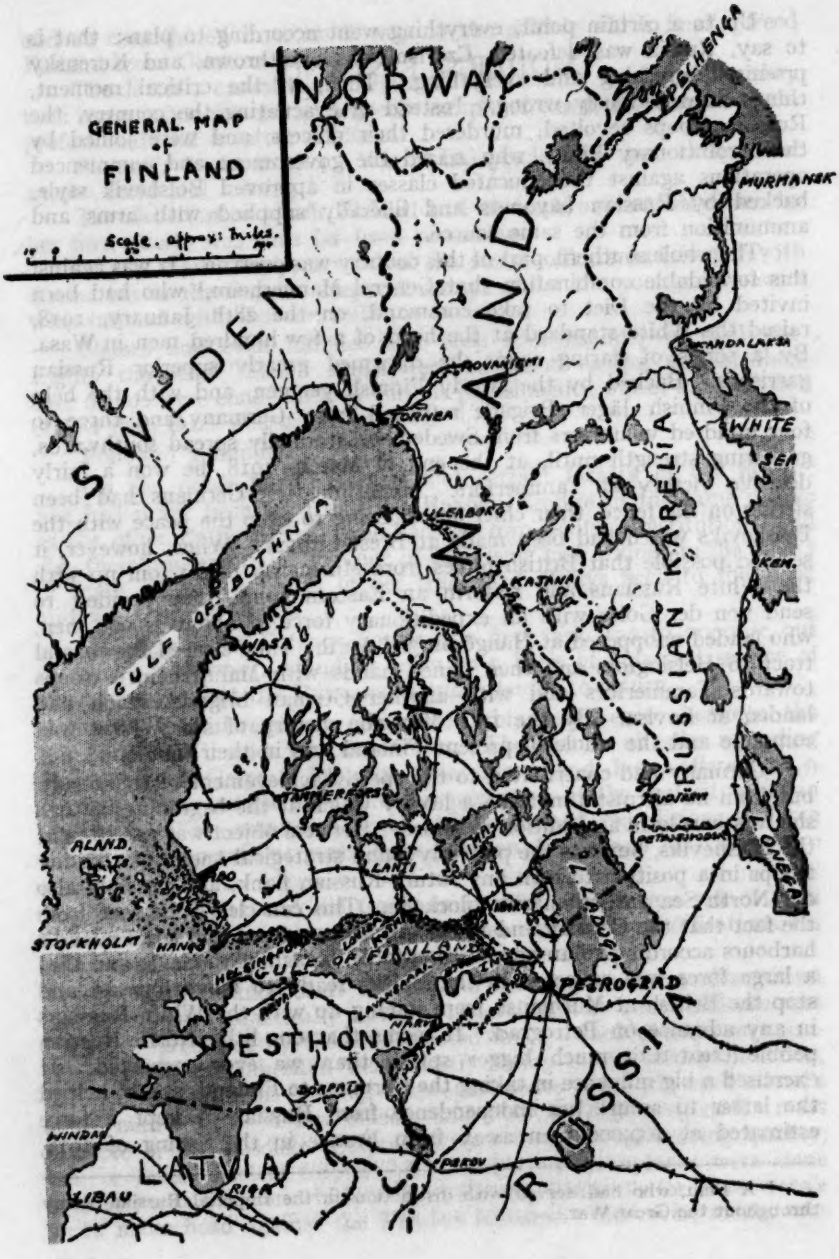
LIKE the Balkans in the South, Finland in the North has been the meeting point of Eastern and Western civilisations—the former represented by Russia, the latter by Sweden.

The true Finn, it is thought, came originally from Central Russia, whence, after centuries of fighting, he was eventually ejected by the Russians. One branch migrated to Esthonia and spread across the Baltic to Finland, whilst another branch went up the Danube. The language is quite unlike any other known language, except Magyar, and is far from easy to learn. Like our own country, however, the Finn owes much to successive invaders. Conquered and Christianised by the Swedes in the days of the Crusaders, Finland remained under their domination for over 500 years, constantly at war with the old enemy, Russia, until, in 1809, the Swedes were finally driven out, leaving behind them a considerable Swedish-speaking population, and the country became a part of the Russian Empire. Finland received, however, a large measure of self-government until 1899, when a policy of intensive Russification was unwisely commenced.

Now, however, despite the fact that for 600 years or more he has been under foreign domination, the Finn is very like the Englishman, in that he may possibly be led, but he certainly cannot be driven. He is essentially enterprising and of an extremely independent nature. Like the Scot, he took part in all the great wars of the past on one side or the other—sometimes on both, as in the late war—and is a born fighter.

The Russian policy, therefore, raised his fiercest antagonism, and his chief idea before the World War was how to secure his independence.

In the defeat of Russia lay the only chance; and, consequently, soon after the outbreak of war a number of young Finns, having unsuccessfully approached the Swedes, went to Germany to get the military training not permitted in their own country. There they formed the Finnish Jäger Brigade, which fought on the Riga front. Meantime, the nucleus of a National Army was secretly formed in Finland itself.


GENERAL MAP of FINLAND
Scale. approx: miles.
NORWAY
SWEDEN
FINLAND
RUSSIA
ESTHONIA
LATVIA
GULF OF BOTHNIA
GULF OF FINLAND
PETSCHENGA
MURMANSK
KANDALAKSA
WHITE SEA
KEM
TORNEA
ROVANIEMI
ULEABORG
KAJANA
KARELIA
VASA
TAMMERFORS
ALAND Is.
ABO
LAHTI
VIBORG
L. LADOGA
L. ONEGA
PETROGRAD
STOCKHOLM
HANGÖ
HELSINGFORS
NARVA
DORPAT
WINDAU
PSKOV
LIBAU
RIGA

Up to a certain point, everything went according to plan; that is to say, Russia was defeated, Czarism was overthrown, and Kerensky promised anything and everything. Then, at the critical moment, things went seriously wrong. Instead of evacuating the country, the Russian troops revolted, murdered their officers, and were joined by the revolutionary Finns, who seized the government and commenced operations against the educated classes in approved Bolshevik style, backed by Russian bayonets and liberally supplied with arms and ammunition from the same source.

The whole southern part of the country was overrun. It was against this formidable combination that General Mannerheim,[1] who had been invited by the Diet to take command, on the 28th January, 1918, raised the White standard at the head of a few hundred men in Wasa. By a series of daring *coups* he disarmed greatly superior Russian garrisons. Backed by the sturdy Finnish yeomen, and with the help of the Finnish Jäger Brigade returned from Germany and three to four hundred volunteers from Sweden, he gradually spread southwards, gathering strength until, at the end of March, 1918, he won a fairly decisive victory at Tammerfors. Meantime, the Germans had been sitting on the fence, their chief object being to keep the peace with the Bolsheviks which had been made at Brest-Litovsk. When, however, it seemed possible that British forces from Murmansk might join up with the White Russians and re-form an Eastern front, they decided to send von der Goltz with an expeditionary force of about 10,000 men, who landed unopposed at Hangö on 3rd April. They cleared the coastal tract to Helsingfors and then joined hands with Mannerheim's troops towards Tammerfors and with another German brigade which had landed at Lovisa. By the 15th May the victory of the Whites was complete and the whole of present Finland was in their hands.

Germany had contributed to the speedy achievement of this result, but from no altruistic motive—a luxury which at the beginning of 1918 she was hardly in a condition to afford. Her real object was not to fight the Bolsheviks, but was the perfectly sound strategical one of placing her troops in a position to turn any future Russian flank, and possibly also our North Sea anti-submarine blockade. This can clearly be seen from the fact that the German and Bolshevik fleets entered and left Finland's harbours according to an agreed time-table, so as not to clash, and that a large force was collected in the Baltic, ready to move forward and stop the British at Murmansk from joining up with the White Russians in any advance on Petrograd. It seems that our little North Russian pebble created a much bigger splash than we ever suspected. It exercised a big influence in taking the Germans to Finland, and so helped the latter to secure her independence from Russia; it kept a force estimated at 100,000 men away from France in the Spring of 1918,

[1] A Finn, who had served with distinction in the Imperial Russian Army throughout the Great War.

and so contributed in a small way to the *débâcle* which finally freed Finland from German domination.

The latter's casualties in Finland were under 1,000, whilst they took over 20,000 prisoners; a good example of the relative value of the professional and amateur soldier.

Finland's losses in her "War of Independence" were rather over 25,000, dead and missing.

The situation in which Finland had to work out her salvation by her own efforts was thus far from promising.

In the White Army, several of the senior officers had fought with distinction in the Russian Imperial Army, whilst the younger elements were imbued with German military doctrines.

Classes and even families had been split asunder in civil war. Eighty thousand "Red" Finns were in prison camps, and of them over 60,000 were condemned to various punishments, out of a population of less than three and a half millions.

Followed a famine.

On the other hand, Finland had certain factors in her favour. She had never been a part of the Russian Empire in the same degree as the other Baltic States. She had her own political institutions, and she, therefore, had the advantage of possessing men trained in the affairs of State. Moreover, most of her trade had always been to the West and not towards Russia.

As regards the Defence Forces, the first task was to organise out of the White Army a standing army on a basis of universal service of 12–15 months, lest the Russians should attempt to return.

A sharp difference of opinion on this point arose between the Finnish C.-in-C. and von der Goltz. The latter, already regarding Finland as a German Province—the crown had been offered to a German Prince, under an entire misconception of the real situation in the World War—wanted a small, highly-trained expeditionary force which could operate as part of the German Army, and his views were accepted.

Von der Goltz and his Germans were eventually got rid of with some difficulty in the autumn of 1918; but, with slight modifications, his plans remained in force until comparatively recently.

We soldiers know that the task of creating an Army, Navy and Air Force from practically nothing is an infinitely more difficult one than is appreciated by the uninstructed mind. Such defence organisations as Finland inherited were mostly facing in the wrong direction, or required garrisons making disproportionate demands on Finland's small man-power. A few officers and N.C.Os., a heterogeneous mass of more or less obsolete equipment, some barracks of varying quality, two or three obsolete torpedo-boats and a few aeroplanes were alone available as a basis on which to start forming Finland's forces on a scale fit to make head against the Russian Colossus. Moreover, money was

and is scarce, and the higher organisation undoubtedly faulty.[1] It is hardly to be wondered at that the reorganisation did not proceed as rapidly as was hoped by those who did not understand the very great difficulties to be overcome. It was in these circumstances that, at the end of 1923, the Finnish Government decided to appoint a committee to examine the whole problem and to ask the British Government to lend Naval, Military and Air Force officers to assist as regards the Coast Defence, Navy and Air Force.

There is, of course, nothing so easy as to criticise, particularly when one only sees the result and not the original state from which the result has been developed. Short of almost everything necessary to form an army, except goodwill and hard work, the Finns have developed something which represents a certain definite value and has so far proved adequate, with the backing of a fine voluntary organisation—the Civil Guard—to which I shall refer later.

The same may be said of the young Air Force, which is animated by a fine spirit. The Navy still exists mainly on paper, owing to lack of funds, but a start is now being made.

It cannot be denied, however, that Finland's defences, as they exist at present, are an inadequate insurance against the situation which may develop in the not far distant future.

Looking at the country, with its population of 3½ millions, and the 150 millions of Russia, you may say, "Of course, they are inadequate—the problem is an impossible one." But is it? Let us look at it rather more closely.

2. The Country.

As regards area, Finland is a country into which the British Isles would fit comfortably. It consists of one huge forest, covering 73 per cent. of the total area, interspersed with some 35,000 lakes of all sizes, amounting to a further 12 per cent., the remaining 15 per cent. consisting of small clearings round the villages. Moreover, the floor of the forest is usually covered with huge boulders of every size and shape, which were washed down by the glaciers in the Ice Age and which now render movement of any form of transport off the roads extremely difficult and often quite impossible. The roads themselves are mostly unmetalled, and in wet weather rapidly become impassable under any continuous traffic. This would always be so in the spring and autumn; and this year, quite small manœuvres in February had to be abandoned owing to the difficulty of marching and feeding the troops. As Napoleon said of Spain: "A country where small forces are lost, and large ones starve." In the winter the undergrowth dies down, snow covers the smaller boulders, the forests become open and negotiable, the lakes freeze over and, consequently, Finland becomes a country where properly equipped troops can operate on a fairly large

[1] A great change for the better has been effected since the lecture was delivered.

scale. So far, however, it has not been found possible to use motor transport, owing to snow drifts, and the question of shelter at night in anything up to 40° (Fahrenheit) of frost is also a somewhat serious one for an invading army. Moreover, the Finn is far better than the Russian on skis. Still, the Russians are accustomed to such conditions, and the doctrine of the Finnish Army should not be too much influenced by the experience of their own civil war.

However, we are not so much concerned with the interior as with the frontier regions. I propose, therefore, to run round the frontier, taking the sea coast first of all.

3. Sea Coast.

Starting from the north-west, where Finland marches with Sweden, we have the Gulf of Bothnia, across which lies Sweden, and further south, across the Baltic, Denmark, both presumably friendly neutrals at least.

As Finland is not self-supporting, the importance of maintaining sea communications across this Gulf is self-evident, and is one of the first tasks of the future Navy, assisted possibly by Air Forces.[1]

In view of the distance from Russian bases, the number of available Finnish harbours and the narrowness of the open water, this should not be difficult, even though Russia should infringe the neutrality of the Åland Isles, which belong to Finland but are demilitarised by international agreement, a mistake from the point of view both of Sweden and Finland, whose interests are identical.

The Gulf freezes up in winter as far down as Åbo, whence a passage can nearly always be kept open by ice-breakers to the Belt.

From the Åland Isles starts the Finnish archipelago, which stretches right along the southern shores of Finland to near Ino. It consists of myriads of islands and rocks, providing quite an unique shelter, through and behind which run various channels. The land is slowly rising everywhere, and the charting of submerged rocks was carried out continuously under Russian rule. The removal of the lights and buoys would render navigation extremely slow and dangerous at night, and the archipelago thus provides a form of natural minefield. It is true that the islands also provide an infinite number of secure anchorages for a landing force; but, in view of the difficulties of the country mentioned above, it is almost impossible to get away from the rocky foreshore, except at the recognised ports. These lie usually at the tops of long, narrow fiords, and therefore a landing force has the alternative of spreading out its covering force on an excessive front and being beaten in detail, or of riskirg communications being interrupted by an active defence. Landing attacks, so long as Finland has any mobile reserves available, are not an attractive proposition.

[1] The capacity of the railway round the head of the Gulf of Bothnia is small.

In winter, the Gulf of Finland freezes up, starting first from the Russian end, which is a great advantage to the Finns. It is true that the land front is thereby extended, since there is then a possibility of raids across the ice; but, in present circumstances, the vastly superior Russian fleet is out of action during the greater part of the period most dangerous to Finland on the land front.

If the Russian fleet had the use of Reval in Esthonia, and still more of Riga or Libau in Latvia, the situation would be greatly altered to Finland's disadvantage. No longer would the Russians have to run the gauntlet of Finnish air and naval forces the whole length of the Gulf of Finland in summer, nor would they be frozen up in winter.

The enormous sums spent before and during the war by the Russians on permanent fortifications across the Gulf on the successive lines Hangö-Åland Isles, Helsingfors–Reval, Kotka–Lavansaari, Ino–Krasna Gorka, and finally Kronstadt, started probably with the idea of getting secure bases well clear of the ice, and were continuously extended owing to a form of madness for defence works prevalent in Russian strategy. The fact that a handsome percentage of the cost of all such works stuck to the fingers of the functionaries in charge of construction also doubtless had something to do with it. During the War these works were continued—probably at the expense of the British taxpayer—with possibly the additional object of keeping the population occupied and quiet. So far as I am aware, none of them were of any value, or perhaps it would be fairer to say that sufficient deterrent effect could have been achieved at a fraction of the cost. They did not prevent the Russians in the early stages, to the great amusement of the Finns, from sinking a number of their own vessels in Hangö at the mere rumour of a German attack. The Russians themselves destroyed some of these forts with skill and efficiency before they left Finland and Latvia.

This is rather a digression, and to continue our journey:—

Björki Sund was the anchorage from which British coastal motor-boats attacked the Bolshevik fleet in Kronstadt with highly successful results. It was also a British seaplane base.

At Ino the Russians built a colossal fortress with guns to cross arcs of fire with Krasna Gorka. They destroyed it themselves quite nicely, and by the Treaty of Dorpat the Finns may not fortify this part of the coast again.

Coming to Lake Ladoga, the Russian waters, being shallower, conveniently freeze earlier and thaw later than the Finnish waters.

One important factor remains, and that is, that by treaty neither Russia nor Finland may keep ships in Ladoga mounting more than 47 mm. (1·8 in.) guns. Owing, however, to the fact that the Russians can move ships into the lake by the Neva, whilst the Finns have no water communication—though it could be made—the latter cannot effectively dispute Russian naval superiority on Ladoga by surface craft. Fortunately for them, there are other means.

Taking all the above factors into consideration and remembering the past achievements of the Russian Navy, one may reasonably conclude that the defence of Finland's coasts and essential sea communications is by no means an impossible, nor even a very difficult task.

4. The Land Front.

The main feature of Finland's eastern frontier is that it is split up by Lake Ladoga. North of Ladoga the country gets progressively less developed and more difficult to negotiate as one goes north. Roads are few and bad; the forest is almost impassable off them in summer, whilst local supplies are negligible. Moreover, the distance from the Russian Murman railway to the frontier is seventy to a hundred miles, and there is no strategic objective in Finland of any value within seventy miles of the frontier.

On this front, the Finns have the choice of advancing with small mobile detachments into Russian Karelia, where the language and sympathies are largely Finnish and anti-Russian, or of retiring to within easy reach of their own lateral railway, where they have all the advantages of interior lines as between the Russians operating north and south of Ladoga. Nor is it easy for Russia to remedy this defect, because the Finnish bank of Lake Ladoga is exceptionally rocky and rugged and very easily defended, and a road and railway run within easy distance of it for the movement of Finnish reserves. It is clear that the main theatre of operations must be the area between Petrograd and Viborg, known as the Karelian Isthmus.

Here the rocks give place to sand, but, except in certain restricted areas, the country still consists of forest, marsh and lakes, and is not very much easier for military operations than elsewhere. The average breadth is only fifty to seventy miles, and the numerous obstacles again favour an active and enterprising force making full use of the advantages of interior lines.

From the Russian side, four main roads and two railways (one double) lead from the bottle-neck of Petrograd. These roads run through defiles of various descriptions, and their present dilapidated condition may be judged by the following photos,[1] which show the frontier bridges, or what is left of them. Presumably, they will eventually be re-established when the Bolshevik rabies dies down. In the days of Imperial Russia the whole pine and heather-covered coast from Petrograd to Ino used to be the summer residence of the well-to-do official or business man in Petrograd, whence he went in daily to his work. A very pleasant place it must have been. Now there is an air of utter desolation, and the houses—wooden—are falling down or being removed to other places in Finland. In 1918 one of my Finnish friends rented a villa there for 7*s.* 6*d.* for the season, but the price has now risen to £10.

[1] Not reproduced.

5. The Problem.

However, to return to the problem. It is evident that there is here little possibility of advancing rapidly on a front of several hundred miles with mobile troops, as the Bolsheviks did against Poland, nor yet of employing overwhelming masses of men in traditional Russian style. The Finn himself has a firm belief in his individual superiority, and, given an efficient Finnish Army, the conquest of Finland would be a very tough nut to crack, needing time and preparation and hard fighting. Eventually, numbers and money must tell, and no one imagines that a little country like Finland can, single-handed, hold out against a country like Russia for an indefinite time.

But we must remember that, in former times, Finland's importance to Russia lay in its being a jumping-off place for a further advance over Sweden and Norway to the North Sea. Unless Sweden tempts Providence by disarming, that possibility can be ruled out at least for many years to come. Finland's army can never be an active danger to Russia, though the latter would possibly like a little more breathing-space round Petrograd if there was any chance of a foreign Power using Finland as a base for operations against it. From this point of view, a Finnish Army, strong enough to maintain Finland's neutrality, is a factor favourable to Russia. At present, the only advantage to Russia of conquering Finland would be the use of naval bases in Hangö and Åbo, which can usually be kept open by ice-breakers; and there are better bases elsewhere. Finland's military task, then, is to make the certain losses and effort for Russia not worth the advantages to be gained.

Moreover, if it were so important for Russia to get these bases, it would probably be equally to someone else's interests to prevent her from doing so. Consequently, it is not likely that, in point of fact, Finland, if attacked, would be single-handed for a long time. If therefore, she holds fast to her present determination to maintain her independence and to pay the military insurance premium necessary for the purpose, her prospects of success compare very favourably with the majority of the new States.

6. Elements of Weakness.

At the same time, there exist for Finland at present certain elements of weakness in the situation. If I venture to point them out, I do so only from a feeling of real affection for a country where I have spent the best part of a very happy year. They are either the direct result of the civil war already referred to, or due to the exuberance and enthusiasms of youth. Apart from the Red Finns who fled to Russia and still remain there, there is a large, though probably decreasing, number of so-called "Reds" in the country, who are credited with advanced revolutionary ideas. This is the case in most countries as the aftermath of the World War; but Bolshevism in the States bordering

Russia looks a very different thing to what it does when viewed across an expanse of salt water, and Finland has already had one bitter experience. The recent attempts at revolution in Esthonia is a reminder that the cause of infection is very near, though, personally, I believe that the great majority of the Socialists in Finland are far too patriotic to be very susceptible to the disease.

The visible safeguards are "Finland's Civil Guards" (Schutz Corps), a voluntary organisation some 100,000 strong, supported mainly by voluntary contributions and embodying those whose "allegiance to the existing constitution may absolutely be relied upon," *i.e.*, the elements who have a stake in the country. The newly-elected President is himself a private in the Schutz Corps. The limiting factor as regards numbers is chiefly funds. In connection with it is an admirable women's organisation, which raises money, recruits, cooks and generally cares for the material welfare of the Civil Guards in barracks and on manœuvres. I commend the idea to the Territorial Associations.

In my opinion, the Finnish Civil Guard at present is the greatest factor for peace in Finland, and possibly also in the Baltic. Moreover, its existence has enabled the Government to exercise a bold policy of clemency towards the great majority of the "Red" elements who took part in the civil war. Solidarity must, however, eventually come from a fusing of the conflicting interests, and not by one portion having to watch the other. The establishment of a White Russia would be a powerful factor towards producing national cohesion. The increasing prosperity of the country is also, as shown by the elections, tending to increase the proportion of the population whose interests lie in the maintenance of peace and good order. The Civil Guards will then, on a wider and more non-political basis, continue its more permanent functions of teaching patriotism; possibly also of training in peace the reservists of all ranks for the Regular Army, and in war of forming the *cadres* for mobilising second-line troops behind the Regular Army.

It is on the efficiency of the Regular Army, however, that the future security of the country will depend, and, in paying special attention to the higher education of the officers, the Finnish High Command is starting at the right end. The full effect of the young Staff College will only be seen later, and meantime the Army is passing through a difficult stage. In welding the various classes together, the Regular Army in peace has a great duty to perform. Through its hands pass all the youth of the country without political or class distinction, and it therefore has an unique chance to foster mutual trust between classes and to instil patriotism into a very fertile soil.

Bad conditions of service in the Army are a very expensive economy, and much remains to be done in that respect, but it means money—and that is the chief difficulty.

So far as I can judge, our British principles of treating the men are more likely to get the best out of the Finn than the more rigid German system.

As regards war, Finland's peace army—apart from the Civil Guards—is only some 25,000 strong, and a very big expansion will obviously be necessary. This can only be done if the peace *cadres* are good and sufficient. The officer question is, however, difficult at present. Nothing but the best is good enough. I have a high opinion of the average Finnish officer, but he fails in one respect, and that is, that there is not nearly enough of him.

So far, also, there have been too many changes in the higher direction. For instance, although the Minister of Defence is, theoretically, a non-political appointment, there have been no less than fourteen changes in the last seven years. This would be bad enough in England, but it is much more serious in Finland, because the Minister combines his political functions with those of our Q.M.G., M.G.O., and A.G.

7. Political Orientation.

Before I close, there is one point I should like to touch on, and that is the question of Finland's political orientation. Unity is strength, and these young States round the Baltic naturally look about to see how it can best be obtained.

At present, Finland has two main alternatives—a Scandinavian *bloc*, or a Baltic–Polish *bloc*—and the choice is difficult.

Economically, Sweden is probably an essential base of supply to Finland in war. The fact that she once refused help in the hour of trial and that, like Denmark, she is flirting with disarmament, cannot alter geography, nor the fact that Finland's independence is a vital interest for her. But Finland feels, not unnaturally, that she, Finland, is holding an umbrella over the Scandinavian countries and that they are not to be relied upon to do their fair share.

In the other combination, Esthonia is a blood relation, and her security, and that of her ally, Latvia, undoubtedly affect Finland's defence. Finland's situation as regards these Baltic States has some resemblance to our own as regards France, *i.e.*, any threat to their security would be a matter of grave concern to her. But the Russian fleet may render communication to Esthonia difficult; and, moreover, if one definitely joins the "cordon sanitaire," one may become involved in complications not affecting the Baltic and extending as far south as the seat of all complications—the Balkans. Therefore, Finland prefers, at present, to retain her freedom of action, as England has usually done, even though this may seem to result in isolation. She is a strong supporter of the League of Nations, but her confidence in its protection has not been strengthened by the fate of Georgia. As regards the Great Powers, she is grateful, and rightly so, to Germany for the assistance which was given in 1918, when, owing to fear of the Entente Powers, Sweden did not dare even to send her arms. But that is past history. The essential factor in Finland's policy is fear of Russia—Red or White—and Germany's value as a safeguard in the future is somewhat uncertain.

Finland, therefore, looks beyond her immediate neighbours to England, and possibly also to America, for moral if not material support. And as England is taking 40 per cent. of her total exports, in return for only 20 per cent. of imports into Finland, we can claim that we are already doing our share in peace time in a tangible form.

In conclusion, though time does not permit me to say anything about sport or sportsmen, I cannot wish anyone here better fortune than a trip to Finland, where he will find both.

DISCUSSION.

Mr. Ossian Donner (Finnish Minister): I would like to say a few words of thanks to General Kirke for the very interesting lecture he has given us to-day. To those who do not know Finland and have never been there it is very difficult in an hour's lecture to give a true picture of the country and its possibilities, and naturally General Kirke has confined himself mainly to a statement of the military position and the possibilities of defending the country against our only possible foe. I hope that all of you here, like myself, have got the impression that the problem of defence is not as impossible as it might appear to be on the face of it. Personally, I have gained considerable confidence from what General Kirke has said on that subject. Of course you need to have been born in Finland, and to have grown up there, to appreciate the position in which we are with regard to Russia. Finland had for 650 years been joined to Sweden and got all her culture from the West through Sweden. Our sympathies, therefore, were turned that way. Then Finland was joined to Russia for 108 years. In history 108 years is not a very long time, and the farther we get from the time when Finland was joined to Russia the shorter it will appear. Now the question arises: What have we derived culturally from Russia? That can be answered very shortly—nothing, absolutely nothing. Now Finland is free from Russia at last: the visible remains of that connection consist of about half a dozen churches. Our cultures differ: ours is Western, theirs is Eastern. Our religions differ: we are Lutherans, they are Orthodox. I only mention this as showing that our mentality must differ also. We feel no gratitude towards the Russians; we have nothing in common with them. There are practically no Russians in Finland. We do not understand their language and we do not require it, except, of course, the few individuals to whom it may be convenient and necessary. I mention these facts as indicative of our mentality, because, after all, mentality underlies everything in this connection. It also explains that if in future there is to be a conflict we mean to defend ourselves. I beg to thank General Kirke for the interesting lecture he has given us and for what he has told us, and personally at least I have got the impression that the problem of defending Finland is not insoluble.

Mr. W. W. Grantham, K.C.: I should like to ask the Lecturer one or two questions. In the first place, was anything done by the Russians in the way of erecting forts at Torneå several years ago? My recollection of a visit to Finland 23 years ago is that the Russians were intending to erect forts, or make some arrangements by means of which they could get through north of Sweden, further west than General Kirke has just mentioned. Secondly, did General Mannerheim make any use of the railways when he advanced with his force south of Tammerfors towards the coast? I should also like to ask yet another question

with regard to the German troops. How many of the 100,000 German troops that were ready to sail from the Baltic States to Finland did actually sail? or did they remain the whole time in Esthonia, with the object of seeing what would happen to the force coming south from the Murmansk coast? If the Germans were able to land a large proportion of those 100,000 men on the south coast of Finland, it proves that troops could advance through a larger portion of Finnish territory than we understood from the Lecturer. I remember how bad the roads were and how indifferent the railway service was; but I am under the impression that the Government have now improved the railways in Finland. As the roads are bad, good railways would naturally be of advantage for conveying troops from the north to the south; but I think that railway transport is still difficult from east to west and from west to east.

Major-General W. M. St. G. Kirke, C.B., C.M.G., D.S.O., in reply: A reference has been made to a place called Torneå on the Swedish frontier. I do not know that the Russians did anything special there. The Swedes had a fortress facing that part of the frontier, the garrison of which has, however, been very much reduced since Finland became independent; but I am quite certain that if there had been any excuse for making fortifications the Russians would have built them. You can hardly go anywhere in ex-Russian States without seeing how money has been squandered on permanent works. They made enormous fortifications round Helsingfors; they started doing the same round Reval. At the latter place they spent vast sums, yet there is nothing to show for that expenditure except a tunnel or two through the hills and a lot of half finished trenches blasted out of the rock. As regards the use by General Mannerheim of the railways, the forces which he had under his command were comparatively small. I do not think that at Tammerfors he had more than 10,000 men. The operations were generally conducted by columns no bigger than brigades, and often only by battalions or companies. General Mannerheim certainly had the use of the railways for supply, and in fact for all purposes, but the majority of the operations give no sort of hint in considering what a "full dress" campaign against Russia would be like. The railways are, however, being continually improved and extended as funds permit and the Finns are fully alive to their importance.

As regards the German troops, not more than 25,000 were ever actually in Finland. The remainder of the 100,000 that I mentioned were kept in readiness south of the Gulf of Finland until after the great German advance on the Western Front, when, of course, they were sent West, but they were away from the decisive point at a very critical time. As showing the difficulty of landing operations on this coast, I might state that at Kotka there was one battery of, I think, three 6-inch guns. The Germans wanted to land there, because it was a better port than Lovisa and gave much better access to the main lateral railway line; but they were not quite certain whether the Russian garrison of this battery might not open fire. They, therefore, dropped the plan of going there altogether and went to Lovisa. With regard to the landing at Hangö, it was carried out practically under peace conditions, because, before the Germans landed there, the effect of General Mannerheim's battle at Tammerfors had drawn away most of the enemy from this part of Finland. Nothing took place in the War of Independence that could in any way lead to a belief that a landing attack on the coast of Finland is an easy operation.

The Chairman (General Sir George Milne, G.C.M.G.): Ladies and Gentlemen, I should first like to thank the Finnish Minister for coming here to-day and

putting the whole situation very much more plainly before you than I would dare to have done. The crux of the situation in Finland has been clearly envisaged by him in the last few words of his remarks. There are, however, one or two points in the lecture worthy of our study.

The first is the very much criticised expedition to Murmansk. To-day is the very first time it has been brought to my notice that that expedition kept such a large number of Germans away from the Western Front. These small "side shows," as they were called, were very often severely criticised; but for those who are studying strategy it is worth while reflecting on the effect which a small expedition such as described could exercise on the main front in keeping troops away from the main theatre of war. Then I would like to call your attention to what Finland seems to be doing in regard to self-defence. We are told that the country is as large as Great Britain and Ireland, but that the population is only 3½ millions. Nevertheless, the Finns maintain an army of 25,000, in spite of the fact that it is a very poor nation. It is also worth while considering the work which the women of the country are doing—a very great deal —to assist the men to defend their homes.

The strategic and geographical positions of Finland are of vital importance to ourselves. Most of us, I am afraid, do not know very much about Finland, but as a nation the Finns are very much like us. For years they have fought for freedom; they have insisted on being a democratic self-governing nation. For 800 years, as the Finnish Minister has told us, they obtained their culture from Sweden, but they insisted during all those 800 years that they should be an independent nation—not so much under Sweden as attached to Sweden. Then they passed over to Russia, and for another 100 years they resisted every endeavour on the part of the Russians to incorporate them into the Russian State. Now, as we have been told, they do not want to have anything more to do with Russia; they do not want to have anything to do with Bolshevism. There are Red Finns and there are White Finns, but I think I am right in saying that the two will amalgamate into Pink Finns against the Russian Reds. The Reds and the Whites will come together rather than that the Reds should go over to the Russians. They are determined to have their country to themselves. Finland is at the present moment practically the north-eastern barrier or bulwark of Western civilisation. It is not Russian; it is Finnish. They do, I believe, look to us for sympathy and assistance in their troubles. It certainly seems to me that Finland is a country which deserves our great sympathy and our moral support, though I do not suppose that in these days it will get very much more than our sympathy and moral support. They take a certain amount of our produce, and they would take a great deal more if they could afford to: but they cannot afford to on account of our high prices.

I will not take up your time any further, but ask you to accord a very hearty vote of thanks to the Lecturer for the most interesting lecture he has given us this afternoon.

The resolution of thanks was carried by acclamation.

THE SITUATION IN CHINA.

By a SHANGHAI TRADER.

IN any attempt to give an account of recent happenings in China the chief difficulty is that, in order to make one's narrative intelligible to English readers, it is necessary to try and enable them to visualise conditions of life in China at the present moment. Especially is it necessary to form some conception of Shanghai—its size, its population, and the strange constitution under which it is governed. Not long ago an American publicist of some repute, writing in one of our leading journals, gravely stated that Shanghai was under the British flag, placing it in fact in the same category as the British colony of Hongkong. Many Britishers actually living in Shanghai also naively believe that they are under British rule and only dimly perceive that in some inscrutable way other foreigners also seem to have a finger in the pie. Hence when an affray breaks out in the Nanking Road, which is to Shanghai what Oxford Street and Bond Street combined are to London, and the Police shoot down the rioters, it is not surprising that the Chinese fall into the same technical error and turn the whole fury of their resentment against the British alone. The error, however, is but a technical one. In theory Shanghai is governed by an International Council and every nationality shares equally the burden of responsibility; but so pre-eminent is the splendid position which the vigour and foresight of our merchants has built up that it is in reality the British alone who bear all this responsibility, handicapped, on the one hand, by the necessity of consulting at every turn the rights and interests of other Powers, yet, on the other hand, freed in large measure from the dead hand of Government control. We must go back to the beginning and explain all these mysteries.

Sixty years ago Shanghai consisted of a small third class Chinese town or *Hsien*, where a few foreign *Hongs* had established themselves on the banks of a tidal creek (the Whangpoo) outside the city walls. On this mud flat a small area—the Foreign Settlement—had been delimited for the residence of foreign merchants. A former British Consul General, who arrived in China just under sixty years ago, described how on the day he landed at Shanghai he went to a Ball attended by the whole foreign community: exactly seven ladies were present. Now the Foreign Settlement contains a population of 30,000 foreign and 1,000,000 Chinese inhabitants; and thus the modern city has practically engulphed the little Chinese town of Shanghai. The tiny little Foreign Settlement has grown into one of the great cities of the world. This city is now governed by foreigners to the almost total exclusion of Chinese sovereignty. The annual revenue raised by the

Municipal Council is as large as that of some of the smaller Provinces of China.

The Settlement began its existence as a British Concession, but the British, with their usual farsighted generosity in such matters, early threw it open to all comers and made it an International Settlement, though the French stood out and kept to their own smaller Concession alongside. The Chinese Government agreed that the municipal control of this International Settlement,—that is to say, all matters pertaining to policing, lighting, scavenging, waterworks, etc., etc.,—should be vested in a Municipal Council elected by the foreign ratepayers, and a code of Municipal Regulations—Shanghai's constitution—was duly agreed to by the Chinese Government and the various foreign Treaty Powers. Now these regulations gave the Council authority to acquire land for the purpose of constructing roads in the Settlement, while a very curious clause was allowed to creep in allowing the Council to extend these Settlement roads beyond the limits of the Settlement and to acquire land outside the Settlement for that purpose. The Council has made the fullest possible use of this power. Many miles of road have been built outside the Settlement boundary and the Council have assumed the powers of policing these roads, laying watermains and sewers and electric cables, running trams and omnibuses along them, and, in fact, treating them in every possible way as forming part of the Foreign Settlement itself. It is this bold forward policy that has made possible the phenomenal expansion of Shanghai in the course of one generation from a village into the present great city. Unfortunately, though quite naturally, the process, which is no more nor less than the growth of a huge foreign *enclave* on Chinese soil, has been watched with an ever-increasing jealousy and irritation by the Chinese. In a material sense, of course, the Chinese profited enormously by this rapid increase of wealth, but their rising sense of nationalism could not but be outraged by the sight of more and more of China's soil being swallowed up and transferred to an alien sovereignty by a process which they hardly understood and were wholly unable to resist. In addition to this great question, several other burning, if minor, problems have now arisen at Shanghai—these are the control of the Mixed Court, Chinese representation on the Council, Parks for Chinese, etc. etc.; but it will be more profitable to proceed to a consideration of the general question of the position of foreigners in China.

In China the system of extra-territoriality is in full force. No British subject is justiciable in a Chinese Court, but only in the Court of his own nationality, and, in general, if an offence is committed, the offender can only be tried in the Courts and by the laws of his own country; while, if a civil dispute should arise involving litigation, the only Court competent to try the action is the Court of the Defendant's nationality. In times past the Chinese welcomed this system because it relieved them of responsibilities which they had neither the desire nor the ability to undertake. Nowadays, however, not merely young

China but all Chinese feel acutely that Extra-territoriality brands them as an inferior race and places the foreigner in an unfairly privileged position. These privileges, moreover, are greatly reinforced by a series of commercial treaties defining the conditions under which the foreigner may trade and the taxes which he may be called upon to pay. As usual, the greatest irritation and friction arises out of the less important matters involved. The inability of the Chinese Government to expropriate foreign-owned land for public purposes or the refusal of foreigners or the Chinese tenants of foreigners to pay shop or house taxes and similar levies, because such taxes are not mentioned in any treaty, cause an amount of suspicion and irritation out of all proportion to the value of the privilege itself. More important are the numerous taxes which the Chinese are always endeavouring to levy on merchandise in transit and on trade generally and which the foreigner, if he is to continue to do business in China at all, is obliged to resist with all his might with the aid of the much-hated Treaties. During the last few years the Chinese have been getting more and more restive at this privileged position of the stranger within their gates; they have shown less and less inclination to observe Treaties which they now speciously claim were imposed upon them by force or extorted from them by trickery until at last, under Russian inspiration, they have come out into the open with the demand that all "unequal treaties" be abrogated. It is desirable that the student of Chinese affairs should have a sympathetic understanding of Chinese sensitiveness and aspirations in regard to Extra-territoriality and "unequal treaties." The stirring of national consciousness and the growth of a self-respecting patriotism may be uncomfortable for others, but should command our respect. Nevertheless, the foreigner in China is in no way responsible or to blame for the conditions which the Chinese find so wounding to their *amour propre*. The blame, if any, rests on the Chinese alone, who, even down to the present day, have failed to set up a form of government able to afford reasonable protection to life and property or to provide the ordinary decencies and amenities of civilised existence. From the very beginning the British have merely demanded conditions which shall ensure justice and fair treatment and they will never be intimidated into tamely submitting to the tender mercies of a Chinese Administration. For some years past the Bolsheviks have worked hard to capture the nationalistic patriotic movement in China and turn it to their own base ends. Moscow has spent vast sums of money on propaganda among the students, employing both Russian agents and Chinese specially trained in Russia for such work. They realised that the direct introduction of Communism or of the Soviet system into China was impossible and they strove, therefore, to direct the national movement into anti-foreign, and especially anti-British and anti-Christian, channels. Their ultimate aim was to bring about a general strike, believing that in the general ruin and chaos the Bolshevik cause would prosper. An unkind fate ordained that the outbreak in Shanghai should occur in

such a way as naturally to swing the whole national sentiment of the Chinese against the British and thus play directly into the hands of the Bolsheviks.

The industrialisation of China in recent years has produced a labour movement analogous to that in Europe. The workers have organised themselves to fight for better wages and better conditions and their chief weapon is, of course, the strike. Normally all this has little to do with the foreigner, for the vast mass of employers are Chinese. But, apart from the activities of Soviet emissaries, political agitators have deliberately fomented strikes against the Japanese, in spite of the fact that wages and conditions of labour in Japanese mills are distinctly above the average. This is because Japan is still unpopular in China, although she has abandoned her former aggressive policy and has faithfully lived up to the engagements which she entered into at the Washington Conference. Up to last autumn the Chinese authorities kept matters well in hand and prevented the anti-Japanese strikes being carried to the pitch of actual disorder. In September of last year, however, it will be remembered, civil war broke out in the neighbourhood of Shanghai and quickly spread through the whole of China. As far as Shanghai was concerned the result was that, except for the Foreign Settlement area, for several months organised Government came to an end. The agitator and the Bolshevik plied their trade unchecked. Strikes occurred more frequently and became more violent. Lives were lost and it was as a protest against some strike incident at a Japanese mill that the students organised their procession of 30th May. This was the spark that started the conflagration; but it is clear, of course, that the connection is only accidental and that the labour movement is in no real sense the cause of the popular tumult that followed on the shooting affair of 30th May. The facts are now familiar to all. The students marched in procession up the Nanking Road carrying banners and distributing anti-Japanese handbills of the most virulent nature. The riff-raff of Shanghai—probably the worst of any great city in the world—quickly flocked to the scene. A formidable riot developed and eventually the police fired upon the mob. Immediately a storm arose from one end of China to the other, the whole fury of the Chinese being directed against the British alone. As was pointed out at the beginning of this article, it is in fact the British who bear almost the whole responsibility for the administration of Shanghai. Six out of nine Councillors are British, while of the permanent staff all the Heads of Departments, such as the Commissioner General, the Secretary, the Commissioners of Police, of Health and of Public Works, the Heads of the Electricity Department and of the Fire Brigade, are British, and, with very few exceptions. the whole of the very large clerical staff which serves these various Departments is also British. The Volunteers, some 1,400 strong, perhaps the most efficient volunteer force in the world, are international in character, but are commanded by a Colonel on the Active List of the British Army appointed to that post by the British

War Office. It is not unnatural, therefore, that the Chinese should hold the British responsible for the affair of 30th May. But, unfortunately, it is no longer a matter of settling this single incident, for this issue has broadened out into the wider problem of the whole privileged position of the foreigner in China—in other words, the issue of Extra-territoriality and unequal Treaties; in this wider issue, again, it is the British who have to bear the whole brunt of the fight. Egged on by their Russian friends, the students have decided that Extra-territoriality is to be abolished and the unequal Treaties abrogated by the simple process of intimidating the British into yielding. The British, of course, have no intention of yielding, although up to now it has not been very apparent to the man in the street what steps the British Government were taking to safeguard our vast interests in China. A boycott of unprecedented severity has been directed against the British and has been kept going by intimidation of the most violent and criminal character. We have proof that the Russian Embassy in Peking and the Russian Consulate General in Shanghai directly undertook the organisation of this campaign of crime, on which they expended large sums supplied by Moscow. During the last four months the losses suffered by the British merchants in China have been colossal. At the moment the situation is said to be slightly better, and great hopes are placed on the Tariff Conference which is to meet in Peking at the end of October. Whether this optimism is well placed or not it would be difficult, at the moment, to state. All that one can say is that British statesmanship will be taxed to the utmost to find a solution to a singularly perplexing problem. Most well informed observers are agreed that the Chinese will furiously reject any attempt to tinker with the problem—such as offering to increase the Tariff and so on. They will be content with nothing less than a radical alteration of the whole system of relationship between foreigners and Chinese. And yet, however clumsy and unsatisfactory the present system may be, however anxious we ourselves may be to institute a better system, how are we to discuss changing it when China has practically no Government with whom we can negotiate? How can we surrender Extra-territoriality when life and property were never more insecure than they are now? How can we abrogate Treaties which provide some sort of system under which commerce can be carried on when there is nothing but chaos to put in its place? The gravest of our difficulties, however, is to be found in the fact that Britain has been singled out for attack, while, apparently, Britain can take no measure in self-defence without first consulting and obtaining the assent of other Powers who, it is notorious, would rejoice to see us ruined. Unless some way out of this difficulty is found, perhaps by breaking away from ordinary diplomatic procedure or by refusing any longer to subordinate every British interest to the European situation, the outlook for Great Britain in China is not a very bright one.

THE SPANISH FOREIGN LEGION.

By Lieutenant G. H. J. Evans, R.N.

(By permission of the Naval Staff.)

FIRST formed in September, 1920, the Spanish Foreign Legion was intended to follow the French model, but maladministration and general inefficiency soon rendered it a very poor copy of that famous regiment. Recruitment was at first good, and several British ex-Servicemen enlisted in it on what seemed generous terms, while other European countries each supplied a number of trained soldiers. Despatched by Spanish consuls to Madrid, these intending Legionaries found themselves undeceived on arrival. Their pay, five pesetas a day, was indeed —*before* most of it had been deducted—to meet the cost of their uniforms. They had been told that they would be employed as military police, and many had been promised non-commissioned, if not commissioned, rank; yet every man was enrolled as a private. Nor were these the only broken promises. So, very soon every Legionary was longing to desert. To those who did, the punishment meted out by their superiors was extreme, and even slight offences were assured of heavy penalties. As a result, recruitment fell off almost completely, and the few men who did join later were either compelled to do so by force of circumstances (many were sailors stranded in Spanish ports) or did so to avoid the pursuing arm of the law. Eventually, after taking part in some very severe fighting, nearly all the British and a number of the other foreign nationals obtained their discharge through such loopholes as were afforded by the Foreign Enlistment Act or the representations of their own consuls. And not a man of them but was heartily glad to go.

To-day, however, much of that bad beginning has been forgotten and may be forgiven, since drastic changes have made the Legion a very fine fighting force, and brought into being a surprisingly keen spirit among both officers and men. From the very outset some excellent officers were forthcoming, but those of the other variety were conspicuous by their behaviour. Now, almost without exception, the Legion's officers are the best in the Army. A complete reorganisation, moreover, has taken place. Abuses have been redressed; much is done for the comfort of the men; the constitution of the Legion's various units is arranged on a new basis; permanent depôts have been formed and properly designed buildings erected; measures have also been taken to inculcate into the regiment that very necessary adjunct to success —*esprit de corps*.

The Legion, re-named the *Tercio de Marruecos*, now numbers something over seven thousand of all arms, including staff and auxiliary

services. The actual fighting force is divided into two legions, each comprising 3,300 officers and men. The eastern legion has its depôt at Melilla; the western at the camp of Riffien, near Ceuta. Each legion consists of three infantry battalions, or *banderas*, of 800, a cavalry squadron of 160, a machine gun company, staff and other services. These *banderas*, being essentially first-line troops, are kept concentrated at the more important positions, either actually in the line or immediately behind it, whence they can be rushed to any critical point in the vicinity. Thus, at the big camp of Tzenin, inland from Arzila, there is a *bandera*, while there is another at Rgaia, on the Tangier-Tetuan road.

Each *bandera* is further subdivided into three companies. Officially the strength of a company is 265, but it seldom takes the field numbering more than 200. There are always many sick and wounded in the hospitals, for the Legion forms the Army's shock troops and bears the brunt of a wild warfare in a wild country. The percentage of casualties is terribly high. It is no uncommon thing to meet a Legionary who has been wounded seven, nine, or even twelve times, and the death roll is unpleasantly reminiscent of the European War.

By far the greater number of the men are Spaniards; indeed only 18 per cent. are foreigners. But of the Spaniards the majority are adventurers who have knocked about the world and speak several languages. At least a third of the whole roster were sailors before they became soldiers. Of the foreign element, a few have now been promoted to commissioned rank and many are sergeants or corporals. No man not a Spanish subject can rise beyond the grade of captain, but there are very few senior officers in the Legion and should a foreign officer greatly distinguish himself he might confidently expect the rule to be revised.

In the foreign element Germans predominate. There are two German officers in the Legion, and all the Germans recruited in the early days were either ex-officers or N.C.O.s of the Imperial Army. Later recruitments proved unsatisfactory, many of the men being frank Communists and the worst fighting material imaginable. The Russians, who are almost entirely survivors of the various White Armies, originally numbered several hundred; but, owing to war and disease, they are now comparatively few. Recently a Tzarist organisation offered to supply a fresh contingent; but the offer was declined, as the Spanish authorities believed the men in question to be of extremely Socialistic, if not actually of Communistic, views.

With the foreign Legionaries the language question is, of course, a difficulty, and the large number of Argentinians in the *Tercio* testifies to the welcome which Spain is ready to extend to South Americans. There is hardly a Latin republic that has not its representatives, though the Argentine contributes more than all the rest together, with the exception of Cuba. There are more than a hundred Cubans in the

Legion, and several of them are officers. One or two have actualyl fought *against* Spain in the past.

No other nationality, with the exception of the Portuguese, is represented in force, but the Legion includes individuals from almost every country. Only two British subjects are still serving, and both have eighteen months more to serve to complete their four years. One of them is not actually British, while the other, a tarry old sailor, who has been forecastle hand, quartermaster, trimmer and even cook in every class of vessel through many years, is a curious character. Ashore in Malaga seeking diversion, he fell foul, according to his own story, of a fierce cognac that robbed him of his senses. When he regained them, his ship had sailed, and there was nothing for it but a return to oblivion. Then his money followed his ship; cognac climbed automatically beyond his reach; and he owed at his lodging. There remained, of course, the British Consul, and to the Consulate the stranded sailor set his sobered course. But, being a sailor, he took the way by the docks and found there a ship on the point of sailing for Morocco. Her decks were crowded with the Legion's latest batch of recruits, whose uniforms were fresh from the tailors. It is an attractive uniform. The pay sounded good. Four years are not a long time to a man who has made voyages of eight months' duration from port to port and made them often. So the sailor signed on and became a Legionary. It was such a simple matter. Since that morning in Malaga he has had many opportunities of revising his opinion. He has served in every zone of the war and hated them all. He has served in every branch of the Legion's unceasing activity and been a credit to them all—except the cavalry, where he fell off. He has deserted three times and been brought back three times. Now, so strange is the working of the human mind, he is a volunteer in a machine gun company, which is known as the Suicide Club, and he expresses himself as suited, though he reserves the right to growl as often as he pleases and as picturesquely as the fancy takes him.

Many of the men, both in the depôts and in the positions, are as amazing characters as any within the covers of a novel, and they like nothing better than to talk about themselves. Among twenty Legionaries, chosen hap-hazard, there might be found a Dutchman who had sailed ten years in British tramp steamers. a Spaniard who had been a waiter at the Savoy in London and a travelling salesman in New Orleans, a coloured American from South Carolina, an Austrian who used to be a forester on a Grand Ducal estate, a Norwegian who had been quite near the South Pole, an old Catalan who once acted as executioner to a Bolivian president, and an Albanian whose sole desire has always been licence to fight somebody.

Both officers and men live hardly, under canvas, smothered in dust and flies and often with their shirts practically worn to rags, but their physique is magnificent and their health generally far superior to that of the ordinary line regiments. The food rations supplied to them are

surprisingly good, though in all the Army in Morocco that department is deserving of unstinted praise. Sanitation has been properly studied, taking into account all the difficulties of the country, and the results are excellent. In consequence nothing could be better than the spirit of pride and loyalty that pervades a corps after all only in its infancy. Hardly a man or an officer enjoys what he is doing, but that consideration was never, in war, a standard by which to measure either the efficiency or the *morale* of a fighting force.

Riffien, the depôt of the Legion in the Western zone, is reached from Tetuan either by rail or by road. Both run north from the capital across the Rio Martín plain, with the foothills of the El Haus immediately to the left and the blockhouses that hem in the Anjera not two kilometros distant. Both road and rail are closed at night, and during the day the road is patrolled by mounted troops and the *Guardia Civil*, while every train begins and ends with an armoured truck full of machine guns. Passing Cape Negro in a defile between steep hill-sides covered with bright yellow flowers, the road, with the railway beside it, comes close down to the beach and lies among seemingly endless sand-dunes. A little way beyond Rincon, a military post, a small river follows the road inshore and tumbling streams feed it from the springs of the Anjera hills. At Negro the dunes retreat, and a perfect expanse of golden sand suggests possibilities of an Ostend or a Brighton at some future date. Presently, with Ceuta in sight, we reach Riffien.

The railway stations built by the Spanish in Morocco—there is a line from Larache to Alcazar Kebir, as well as this from Tetuan to Ceuta, and various military lines—are of an architectural style both delightful and peculiar. Somewhat resembling the Moorish, it is yet unlike the latter in its robust use of pointed arches and spired towers. Even the smallest wayside station follows this style, and that of Riffien, built by the Legion, is no exception. One man built it. He was a Legionary, a Basque, and it took him nearly three years. He could not fight, for he had been lamed by a wound in the thigh, but he could build. He could carve, too, both in wood and in stone, and he could do both carpenter's and plumber's work and paint frescoes and lay mosaic and tile a roof and make a lock for the door. It is not large, this strange little station-building beside the track, but it is excellently constructed and genuinely beautiful, both within and without.

From the station, by which the road also passes, a gentle slope leads up to the encampment. An avenue of over a hundred trees has been planted, but as yet they are only two to three feet high. Everything here, except the station and one or two other buildings, is in an early stage. The acres and acres of vegetable gardens along the hillside are only half dug, for it takes time to clear the ground of rocks and palmetto, and the soil is poor, necessitating the use of chemical manures. The Legionaries are their own gardeners. But they do

everything themselves. At the top of the avenue is a wide open space flanked by wine shops and other establishments. These are being removed, by degrees, and giving place to houses with gardens, for married quarters. The Legion designs them; the Legion builds them.

The depôt itself is laid out round a large square parade ground and surrounded by a loopholed wall. A mountain stream, coming down past the northern side of the depôt, curves away by the eastern side between the main gate and the wine shops and goes winding down the lower slope under the road to the sea. Immediately before the main gate a bridge spans this stream, and to the left, close under the wall, stands a group of bell-tents, which house the few Legionaries who cannot be accommodated in the depôt. Further south and on the other side of the stream the Legion has its private farm, which is a very flourishing concern and supplies nearly a thousand men with fresh milk, butter, cheese, eggs and a fair quantity of meat. The interest both men and officers take in this farm is extraordinary. To see some of them hanging about for hours to get a peep at a litter of pigs, probably afterwards naming each new pig with perfect gravity, is to know them at once for children. Turkeys, however, have been voted a failure, as the experimental batch would not answer when called and, moreover, refused to let a night pass without showing signs of wishing to die and so turning out half the camp. It was decided that turkeys were too delicate.

Entering the depôt by the main gate, one passes between two sets of stone built offices and arrives presently at the central parade ground. Here there are many new buildings under construction. The men have a temporary reading and writing room, but a large, well designed club is being built and should soon be completed. A steam laundry is being erected. At present the men do their washing in the stream. The bakehouses and new kitchens are almost completed. None of the officers are palatially housed, all occupying small, plain rooms in huts very similar to those of the men. There is no general messroom yet, groups of eight or nine officers messing together in temporary quarters. The long wooden huts occupied by the men are all on the western side. They are only temporary erections, pending the completion of permanent quarters, but they are clean, well ventilated and not over-crowded. Collapsible cots, which can be stowed away in the day time, cover the wooden floor at night.

The hospital, also temporarily housed, is in a hut of similar pattern, but really the whole depôt is a hospital, or at least a convalescent home, for hardly a man there but has been wounded. One old fellow, a Majorcan, from Palma, in the Balearic Isles, is nursing a shattered elbow, his fourth wound. He has white hair and confesses his age to be nearer sixty-five than sixty. He fought in Cuba and he hasn't seen Palma since his twentieth birthday. He is one of the world's waifs —but he grins and says proudly that he is the oldest man in the Legion. His latest wound precludes the possibility of more fighting. He will

be pensioned on full pay, for all Legionaries retired for wounds remain on the strength as supernumeraries until they die. An Italian, a Neapolitan, Jose Cunille Guixo, a private in the Legion, has been wounded on seventeen different occasions—he still has two bullets in him and goes limping on a stick—seventeen different occasions in the three years of his service!—and he will soon be fit to go seeking the eighteenth. He is not certain in his own mind whether he has been lucky or unlucky.

The Legion's hospitals may be a little old-fashioned, but for cleanliness and care they are far superior to any others in the Army, and to-day there is no hospital in Morocco as bad as the best of four years ago. The Legion, too, is the only corps in the Army that possesses its own dental staff. Yet why, at Riffien, for example, the dentist should be a private Legionary and not hold officer's rank, no one seems to understand. Probably it is because the idea of an Army Dental Corps is a new one, and the Spanish take reluctantly to new ideas. This man is a Frenchman and a very entertaining fellow. He holds a University degree, gets a dollar a day and enjoys himself. He says Legionaries are a change from ordinary patients!

The disinfecting plant—a peculiarly looking boiler on wheels—is found very necessary indeed for some of the men. Nearly all the offenders are Portuguese. No Spaniard but has a generous word for their fighting qualities—and, strange to say, there is no need to lie about it, for they fight like unchained devils—but every Spaniard complains furiously of their dirty habits.

It is a curious study, this Legion, and it has already become, after so youthful an existence, remarkably efficient in drill, in deportment, in spirit, in knowledge of warfare and in its application of that knowledge. It has already established traditions. Before long it will have made its own history, and in the future it will assuredly grow into a force that no army may despise.

FRENCH MOROCCO.

Summary of Events: Summer, 1925.

THE recent active operations on the northern frontier of French Morocco are not a phenomenon of sudden or of recent growth. In the last number of this JOURNAL (August, 1925) it was shown how the French had, during 1924, been faced with the possible outbreak of a serious campaign on this front. It might be argued, of course, that the retreat of the Spanish forces towards Tetuan in 1924 hastened the inevitable conflict between Abd-el-Krim and the French. In truth it might perhaps rather be said that, since 1912, a state of affairs had existed on the northern borders of French Morocco which in some ways resembled that which has prevailed at various moments on the north-west frontier of India. In its more acute form, it was not dissimilar to the conditions that existed in 1897 before the Tirah campaign, and again in 1900 when the Mahsud blockade was being enforced against that turbulent tribe. The French finally succeeded in establishing a chain of defensive posts—some 70 in number—along that frontier of Morocco in order to keep in check any incursion of Rifis into their Protectorate from the north, while consolidating their position among the untamed mountain tribes under its cover. By means of this chain of posts, and in rear of it, the French had steadily attempted to affirm their political sovereignty by methods of a system of "pacific penetration" among the mountain tribes. But the difficulties proved greater than had been estimated, and during 1923 and 1924 neither the political nor the military situation of the French had really improved. Consequently, when the long-postponed struggle came to a head in 1925 the position of the French proved distinctly difficult.

Between October, 1924, when the Spanish Government decided to retire to the narrow coastal zone, and the spring of 1925, nothing worthy of much note had occurred. But Abd-el-Krim was now on the crest of the wave. He had driven back the Spanish with loss, had captured large quantities of arms and military stores and had received considerable sums of money in exchange for the liberation of Spanish prisoners. Threats of action emanated from the Rifi tribes, while their agents spread disaffection among those clans which had nominally been pacified by the French. This type of propaganda was not ineffective; it also resembled the past action of Afghan agents among the frontier tribes of the Indian frontier.

The immediate source of the trouble in April, 1925, was the possession of the valley of the Wergha (*Gallicé* Ouergha), one of the most fertile portions of this inhospitable region. During the third week in

April the powerful Djebalas, who had hitherto held aloof from Abd-el-Krim, suddenly threw in their lot with the Rifi leader, broke through the French defensive *cordon*, carried with them a large number of the wavering clans of the Zeruals and crossed the River Wergha, thus threatening the main line of communication running parallel to the front from Rabat to the Algerian borders. The position of the French was soon rendered awkward in the extreme. One half of their available troops was distributed among the defensive frontier posts, whilst out of the remainder there were only available two squadrons, four batteries and six battalions for instant action. This force was assembled in haste on the upper Wergha and ordered to proceed westwards to check the invasion across that river. Reinforcements were hurriedly collected and a few small mobile columns were then formed to relieve the defensive posts. The situation was further complicated in that towards the end of the month the Rifis were also heading for Taza from the direction of Kifane. This brought about a further dispersion of the French forces.

On 6th May, four French columns marched out northwards, one from Taza, two from Fez, one from Kenitra. Four days of heavy fighting ensued and all the posts were relieved, though not without difficulty. But the two centre columns, unable to keep open their communications, finally withdrew to the upper Wergha. Nevertheless, Kifane was held, whilst order was to some extent restored in the vicinity of Wezzan. The situation, however, could not remain as it stood. Heavy reinforcements were called for by the French high command in Morocco, whilst several squadrons of bombing aeroplanes began to arrive from France. Before these supports, except the aircraft, could arrive, the pressure exerted by the Rifis on some of the defensive posts situated on the centre of the line grew so severe as to entail the despatch of small columns to their relief. This type of campaign could only prove unfavourable for the French and quite inconclusive. Each column would move forward under considerable aerial protection; the Rifis might give ground after desultory, or more rarely severe, fighting; then the French columns would retire after relieving the posts. Soon afterwards the entire operation might have to begin all over again. In the end, forty of these posts were either given up or lost.

Meanwhile the disturbances were spreading eastward and insurgent tribes began to threaten the long railway line to Algiers by which reinforcements were to come. The line was actually broken. So the campaign now involved a front of some 200 miles, while the task of the French grew correspondingly more arduous. The total abandonment of the defensive posts became urgent on military grounds, even though it might turn out to be a complicated operation. Nevertheless, from the political standpoint, especially as the operation might entail a grave diminution of prestige, such a course might well prove highly disadvantageous. But on 25th May the decision to abandon the posts could no longer be delayed. Inevitable was the consequence

thereof. What has happened over and over again in Tirah and in Waziristan was now to take place in Morocco. The Rifis, on seeing the last posts being evacuated, fiercely attacked several of the retiring French columns. These latter, more particularly those commanded by Colonels Ferral and Colombat, became involved in severe hand-to-hand fighting, from which they extricated themselves only by means of massed aerial attacks supported by heavy artillery. Fortunately for the French, the Rifis suffered severe casualties and so the fighting died down. By the end of May the French had evacuated almost all their defensive posts except the important points of Taunat and Bibane. Their main forces now stood along and to the south of the River Wergha.

Many of the lessons of this part of the campaign are somewhat similar to those that have been learnt during earlier British campaigns, and especially in Waziristan during the winter of 1919–20. The Rifis had acquired a wonderful knowledge of European fighting methods during their long and varied campaign against the Spaniards. They had captured a vast quantity of rifles and ammunition, not to mention many machine guns: the latter they were, in fact, able to employ to good effect. They also, like the Mahsuds in 1920, had finally employed artillery—captured from the Spaniards—against the invader. The difficulties encountered by the French in the way of employing aeroplanes in these operations were the same as those met by us in 1919–20; but to the French they proved much more surprising because more unexpected. Heavy artillery also failed to achieve what was expected of it, as soon as the objectives were no longer villages and buildings: there were neither trenches nor massed formations of troops to be engaged and the French gunners found rapid fire too expensive in ammunition. Moreover, heavy guns were sadly hampered by lack of roads. Gas shells were certainly employed by the French, but little can be said as to the results obtained by their use: these were probably negligible.

With the end of May there set in a long pause in the operations. French reinforcements were arriving, though these were delayed by the Rifi success in cutting the railway to the east of Taza and by the rising of further clans. The French then wisely attempted to abandon their previous policy of detachments and of frontier posts, since these could only prove unsatisfactory. But the enemy's mobility and the uncertainty as to the attitude of the tribes, if these were abandoned, rendered the introduction of any other policy rather difficult. Some heavy fighting took place round Wezzan, but led to no really decisive result. Twenty miles north-east of Fez there was a protracted struggle for the peak named Bab-Taza, which commanded the main road to Fez. North of the town of Taza there was some desultory fighting with the Tsul tribesmen who continued restless. But Kifane held out. In a campaign of attrition, such as this virtually proved to be, Abd-el-Krim could not be said to gain any great advantage: the French, on the other hand, were troubled by the question of reinforcements and by the trend of politics in Paris.

Meanwhile heavy bombing attacks were being systematically carried out by the French aeroplanes against all the villages and crops of the insurgent tribes. The conduct of these operations was drastic in the extreme, and was further supported by the activity of a few small columns which devastated the country of the tribesmen. Whatever moral results these operations may have achieved—and they are believed to have been appreciable—it cannot be said that they allowed of any concentration of forces or of any major attack on the Rifis. Neither did they prove final. The French may justly claim to have succeeded in protecting Wezzan, Fez and Taza against raids, and to have subdued many insurgent tribes, whilst, in addition, their enterprise against Abd-el-Krim's bridge-heads on the Wergha, at Fez-el-Bali in September, proved highly successful. Lastly, in early October the French succeeded in clearing the mountains west of Taunat and in establishing themselves at that point. This, however, represents the total of their net military gains.

It is believed that the French had, by the end of July, received reinforcements approximating four divisions. These mostly consisted of native infantry from various parts of the French Colonial Empire. But these troops proved an inadequate match for the Rifis, who are by now a formidable enemy in every sense of the word. In addition, being improvised, the higher formations at first lacked the stability and cohesion that come only with time and habit. So the brunt of the infantry fighting has fallen upon the four regiments composing the Foreign Legion and on five Zouave regiments that were in Morocco, say 40,000 Europeans; and these units undoubtedly suffered losses that proved almost reminiscent of the Great War.

The campaign up to this point through the summer heat proved most exhausting. It is said that much has been learnt by the French as to the equipment of the infantry for this nature of fighting. Mobility in this kind of warfare and in such country spells success. Lighter infantry weapons and artillery were found indispensable. A good deal required to be done in the way of training the freshly-arrived troops to the mountain warfare with which they were faced. To those who have any experience of the north-west frontier of India this may all seem very elementary; but the French were faced with the hard fact that many of the coloured troops coming from tropical, agricultural, regions found themselves somewhat at sea in this Moroccan campaign. For these several reasons, and still more owing to the approach of the rainy season, doubts were expressed in some quarters during the late summer as to whether the campaign would be brought to a conclusion this autumn—at any rate by any striking French victory. The present situation lends more than colour to this belief.

Within limits, and in spite of these drawbacks, however, the French may not be dissatisfied with the events during August, September and early October. Abd-el-Krim has made no move and so they were able to assume a limited but vigorous offensive. Fez, Taza, and Wezzan

were effectively shielded from further menace by this more active attitude. The railway line running from Oran to Rabat was secured and the roads leading northwards to Wezzan, Fez-el-Bali, Ain Aicha and Kifane were all made good and patrolled by armoured cars; 6-inch howitzers were also brought into use along them. The actual fighting, however, proved indecisive, Abd-el-Krim retiring whenever there seemed any prospect of his being outflanked, except at Bibane, where a sharp action was fought.[1] Other results were also achieved. From Wezzan to Taza the insurgent tribes on the south side of the French border have been brought back to their allegiance; touch has been gained with the Spanish on the River Lukkus. In short, the French have quite regained the entire line of defensive posts; they have, however, not yet penetrated into Abd-el-Krim's territory.

The military dispositions of the French now appear to be the following: the front is divided into three sectors, based on Taza, Fez and Wezzan; each is held by two divisions of twelve battalions apiece. In addition there exists an army reserve of three divisions in the vicinity of Fez. These divisions have been reorganised for mountain warfare, while the 75-mm. gun has been almost entirely replaced by a 6·5-cm. mountain weapon in large numbers. Work on roads and on Décauville railways is being pushed forward, and, although these stretches of line are as yet short, they are beginning to relieve the work done by the mule transport columns.

[1] The action which was fought on 11th and 12th September round the Bibane *massif* (midway between Wezzan and Taza) is described as follows in the German *Militär Wochenblatt* for 11th October, 1925:—

"There are several tributaries of the Wergha running due south into the main stream between Ain Acha and Mjara. Of these, three lying to the west and two to the east of Bibane were selected for the advance, in addition to the upper valley of the Wergha itself. To each of these six valleys one brigade was allotted, that is, three brigades moved from Mjara and three from Ain Acha. Together with the reserves this means that little short of the equivalent of two Army Corps were employed. Support from 6-inch howitzers was forthcoming since the roads up to the Wergha were practicable and the targets lay not more than 13,000 yards from the river. Tanks were to some measure also employed. Under these conditions the Rifi resistance gave way very quickly, and the French reached their objectives, which lay not very far ahead, without great loss or exertion on the 11th September. Only against the third column from the left, namely, that which endeavoured to take the Bibane *massif* in rear from the west up the valley of the River Audur, did the Rifis offer any stubborn resistance. In fact, they held their ground. On the right wing the easternmost column made only slow progress, being much harassed in flank by the Rifis holding the high ground extending eastwards from Bibane along the upper Wergha. The mountains here rise to a height of 5,000 feet. These were the only two attacks that met with serious resistance on the 11th and 12th. The remaining columns, having attained their objectives, were occupied in clearing their line of approach and the ground they had won of any hostile stragglers. The final capture of Bibane took place some days later, for the bridge-head held by the Rifis between Fez-el-Bali and Ain Acha held out for some time longer. The blockhouses of the old defended line were next placed in a state of defence. But efforts were slowly made to reorganise the whole system of defence. Fewer posts are now being built; they are being strengthened and occupied by garrisons of at least one battalion."

None the less, the situation in general may be said to remain stationary, since, although it has improved in the military sense, politically speaking it is little better. It does not seem to have been affected to any degree by the Spanish landing at Alhucemas nor by the subsequent Spanish attack on Ajdir. Whether the blockade of the Rifi coast by French and Spanish warships will lead to any more serious result is not yet clear. But time, inaction, rainy weather and, last but not least, the play of politics in Paris and Madrid are perhaps factors in the situation upon which Abd-el-Krim is mainly relying. The French have been faced with a thankless and most difficult task. They have certainly found it very different from any of the problems that confronted them during the Great War. So much so, that there is now some talk in France of maintaining an "Expeditionary Force" for colonial warfare.

The actual situation at the moment is summarised in the statement made by M. Painlevé on 21st October before the Financial Committee of the Chamber of Deputies on the credits required for Morocco and Syria (see *The Times* for 22nd October). M. Painlevé stated that the cost of the campaign in Morocco up to date was estimated at 950,000,000 f. (about £8,700,000). The number of troops employed was roughly 158,000. The losses from the beginning of the campaign to 15th October had amounted to 2,176 killed (including 39 officers) and 8,297 wounded. Of those killed, 632 were Frenchmen, and the number of Frenchmen wounded was in about the same proportion. M. Painlevé explained that the military operations were now practically ended, and it only remained to exploit the success already attained to destroy Abd-el-Krim's prestige. The task of pacifying the defeated tribes had already begun, and in due season it would result in depriving Abd-el-Krim of most of his followers.

It might be urged that M. Painlevé may have been a trifle optimistic. However, it is important to note that on the whole his statement was well received by the Committee, although the Socialist members criticised the Government for not having been able to make peace before now. (*The Times*, 22nd October.)

MILITARY AND ECONOMIC INTERESTS, AND THE DEVELOPMENT OF COMMUNICATIONS IN MANCHURIA AND KOREA.

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I. JAPAN'S STRATEGIC INTEREST IN THE MAINLAND.

The geographical position of the Japanese islands is analogous to that of the British Isles. As island States they share the military advantage of having no land frontier. Equally they have learned, by experience in waging war on the continent, that command at sea is essential, and that their frontier is the enemy's coast. Similarly also, air developments (although the Japanese so far lack experience in air warfare) are likely to cause the Japanese General Staff to regard their frontier, for purposes of defence, as extending beyond the coastline into the territory of the mainland.

The Japanese islands, throughout their length, lie close to the continent and enclose the Sea of Japan, which has but narrow outlets to the Pacific. Japan's security from continental invasion is, therefore, dependent upon her ability to maintain supremacy in the Sea of Japan, and to ward off any potential enemy from the coastal fringe of the mainland.

The territory on the mainland that is washed by the Sea of Japan comprises Korea, the Maritime Province and (inland from the coast) Manchuria. Up to the middle of the 19th century all that territory belonged to the Chinese Empire. Since then the following changes have taken place :—

(i) Korea in 1905 became a Japanese protectorate, and, having been formally annexed in 1910, it has become an integral part of the Japanese Empire.

(ii) The Maritime Province, ceded in 1860, is now Russian territory.

(iii) Manchuria is still Chinese territory, but in it Russia and Japan are well established by arrangements with China.

Russia, in 1896, obtained permission to construct across Manchuria the Chinese Eastern Railway. This railway is 5 ft. gauge, and is still claimed by Soviet Russia.

Japan, by the Treaty of Portsmouth in 1905, obtained a transfer from Russia of a lease of " the railway between Changchun and Port Arthur and all its branches." This railway is now known as the South Manchuria Railway (standard gauge, 4 ft. 8½ in.). In 1915 Japan arranged with China for an extension of that lease up to the year 2002.

Since Korea has been a possession of the Japanese this has ensured their complete command of the Korea Strait, and afforded them a sense of security on the mainland within the limits of its territory. As the Maritime Province is a Russian province, over which Soviet Russia still claims sovereignty, there is little likelihood of Japan being able to acquire that territory by peaceful means. Nevertheless, the Japanese Government, in time of peace, has the alternative of laying claim to the hinterland by making further arrangements with China, and increasing its already powerful influence in Manchuria. The Japanese hold on Manchuria would render its immediate occupation possible in the event of war. Thus it is that the claim of Japan to " paramount " interests in Manchuria is inspired fundamentally by the demands of security.

2. Japan's Economic Interest in the Mainland.

Japan is interested in the Asiatic mainland for economic reasons. The islands of Japan do not constitute an adequate economic base, and for raw material required for essential supplies in time of war, Japan is dependent largely upon foreign countries.[1] Therefore, the resources of Korea and Manchuria, if developed for the exclusive benefit of the Japanese, will enlarge their economic base in Asia and help them to become a more self-supporting Empire.

3. Japan's Need for Good Communications.

Japan's primary need on the mainland is good communications. Good communications are essential to her schemes both for military security and economic development. The Japanese Government realised this long ago, and gained the necessary concessions from China for its projects in Manchuria. Japanese money is now being spent on roads and railways in Korea and Manchuria up to the limit of, if not beyond, the means of the Japanese Treasury.

4. Roads in Korea.[2]

Roads in Korea are bad, the majority of them being little more than tracks. Before the war of 1904–05, nothing but tracks existed in Korea, and one of the most noteworthy achievements of Japanese rule has been the systematic construction of a comprehensive network of roads. By the end of 1912, 131 miles of State roads had been constructed. The Government then commenced to undertake a scheme of road

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[1] Particularly the U.S.A. and Great Britain.

[2] Korea, known among the Japanese by the name of Chosen, is slightly larger than England and Scotland. It is divided into two distinct parts, the highland to the North and the lowland to the South. Whereas the highland area is well wooded, wild and sparsely populated, the lowland area is agricultural and densly populated.

construction covering 10,400 miles. The following figures are derived from the latest statistics available, dated 31st March, 1923 :—

Class of road.	Finished.	Unfinished.	Total.
	Miles.	Miles.	Miles.
1st class roads	1,493	492	1,985
2nd class roads	3,690	2,292	5,982
3rd class roads	4,407	2,693	7,100

Roads were classified as follows :—

1st class roads ... ... 24 feet wide.
2nd class roads ... ... 18 ,,
3rd class roads ... ... 12 ,,

The metalling of roads is carried out in the usual Japanese fashion —stones are thrown on the surface and left to be worked in by the traffic. Roads are required at present only for native transport, *i.e.*, bullock carts, and for light motor vehicles. In the whole of Korea it is estimated that there are only 1,088 motor vehicles, of which the heaviest is a Ford 1-ton truck. The number of bullock carts well exceeds 89,000. The roads, in their present condition, are unfit to carry heavy military transport for sustained periods. The lack of substantial steel or stone road bridges would prove a serious handicap to the use of modern mechanical transport. In this respect, however, it must be remembered that the Japanese Army is not yet dependent upon mechanical transport for administrative purposes in war. As regards future developments, besides improving existing roads generally, it is believed that work on a scheme for the construction of frontier roads is to begin this year (1925).

5. Railways in Korea.

On the outbreak of the Russo-Japanese war on 6th February, 1904, the only railway actually completed was the branch line from Seoul to Chemulpo. By May, 1905, the Seoul-Fusan line was opened, and during the war a line was hurriedly built by the Japanese between Seoul and Wiju (near Antung), which has since been reconstructed.

The railway system, which is standard gauge (4 feet 8½ inches) may be described as follows :—

The main line.—

Fusan-Seoul-Antung (where it joins the South Manchuria Railway, also of standard gauge).

The principal branch lines.—

Taiden-Moppo. Completed.
Seoul-Chemulpo. Completed.

Pingyang-Chinampo. Completed.
Seoul-Gensan. Completed.
Gensan-Kwainei. Expected to be complete in 1927.
Pingyang-Gensan. Survey completed; construction not yet begun.
Fusan-Gensan. Project indefinitely postponed.

All the standard-gauge railways in Korea are State-owned. In 1918, the Japanese Government, considering single control advisable, leased all State railways in Korea to the South Manchuria Railway Company, but after 31st March, 1925, they were taken over again by the Government. At the end of 1924 the total mileage of Korean State railways was 1,300 miles (single line throughout). This mileage is considerably less than half that in Ireland or New Zealand, although Korea has twice the area of Ireland and is nearly as large as New Zealand.

With regard to rolling stock, there are at present 247 locomotives of all types, 494 passenger cars, and about 1,500 covered and 1,000 open waggons and trucks.

The number of trucks available in the peninsula is inadequate for military transportation on a large scale.

6. Light Railways in Korea.

The development of light railways in Korea is due largely to the fact that the Japanese Government has granted subsidies to private railway companies.

The total mileage of light railways in Korea, at the end of 1924, amounted to 399 miles.

One light railway system is projected, or under construction, up the Yalu river, to connect with another system based on the north-east coast. These systems will connect the frontier with the broad gauge railways. There is also a network of light railways to be completed in southern Korea, designed to feed the Taiden-Moppo line.

7. Roads in Manchuria.

Roads in Manchuria are bad, and for the most part unmetalled owing to a scarcity of stone. As a means of trading they are secondary to rivers, which are used extensively. The railways are inadequate for the full development of the country, but, owing to a lack of roads to feed existing railways, the construction of roads appears to be the more pressing need. Be that as it may, there seems to be no important road construction now in progress in Manchuria, except the road from Dairen to Port Arthur (21 miles) in the Japanese leased territory.

8. Japanese Railways in Manchuria.

Japan operates the South Manchuria Railway and the Mukden-Antung section. The northern terminus of the South Manchuria Railway is at Changchun Junction, where it meets the Chinese Eastern Railway (5 feet gauge), built and owned by Russia.

Between Changchun Junction and Kirin there is a standard gauge railway which was opened in 1912. This is operated as a branch line of the South Manchuria Railway and, although it was originally controlled by the Chinese, the entire control passed in 1916 to Japan.

Between Kirin and Hailungfu there is a railway projected and surveyed; also between Hailungfu and Kaiyuan, which is on the main line of the South Manchuria Railway. Work on this line is expected to commence shortly.

Between Kirin and Kwainei a railway line is projected and under construction, but so far, about 50 miles only, out of a total length of 262 miles, has been completed; this line will make a connection at Kwainei with the east coast line in Korea.

In the opposite and north-westerly direction from Changchun Junction there is the projected Changchun-Taonanfu line. Taonanfu is already connected with the South Manchuria Railway by the Szeping-kai-Chengchiatung-Taonanfu branch line, and from Chengchiatung there is another branch line completed as far as Tungliao—a distance of 70 miles.

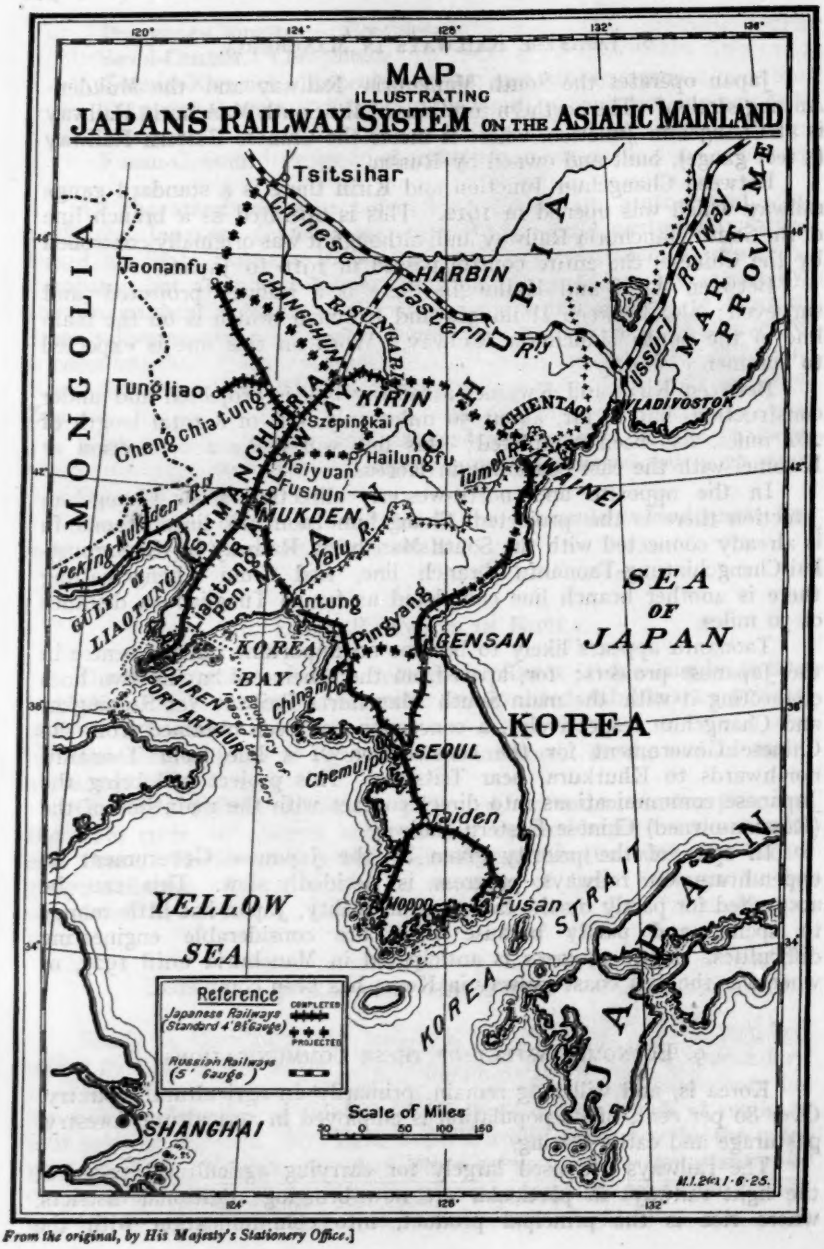
Taonanfu appears likely to become an important railway centre in the Japanese projects; for, apart from the scheme of having two lines connecting it with the main South Manchuria Railway (at Szepingkai and Changchun respectively), a concession has been obtained from the Chinese Government for the construction of a line from Taonanfu northwards to Khurkura, near Tsitsihar. This project will bring the Japanese communications into direct contact with the main line of the (Russian-owned) Chinese Eastern Railway.

In spite of the priority given by the Japanese Government to expenditure on railways, progress is decidedly slow. This can be accounted for partly by the fact that, in reality, Japan has little money to spend, and partly because there are considerable engineering difficulties. Little progress is anticipated in Manchuria until 1927, or whenever the east coast railway in Korea has been completed.

9. Economic Aspect of these Communications.

Korea is, and will long remain, primarily an agricultural country. Over 80 per cent. of its population is employed in agriculture, forestry, pasturage and cattle-rearing.

The railways are used largely for carrying agricultural produce; the light railways in particular are now bringing additional districts, where rice is the principal product, into communication with the



From the original, by His Majesty's Stationery Office.]

various seaports. The rice crops in Korea amounted in 1923 to 15,213,189 *koku*, which is the equivalent of 3,067,175 bushels.[1] More than a quarter of the rice produced in Korea is exported to Japan.

The light railways in the vicinity of the Korean frontier are also designed largely to facilitate the transportation of timber from the vast forest lands along the upper portions of the Yalu and Tumen rivers.

Korea's mineral resources are only partially developed. Money and railway facilities are required for their further exploitation.

Japan takes 92 per cent. of the total export trade of Korea.

In Manchuria the railways conceded to Japan serve as a backbone to the growing strength of her economic position. When the South Manchuria Railway was assigned to Japan in 1905, included with the railway were "all coal mines belonging to it or worked for its benefit." Of these mines, the Fushun collieries are the most important. By 1908, Japan had converted a light railway to Fushun into a standard gauge branch line of the main route. Coal is now exported from Fushun as far south as Hong Kong. Branch lines to Taonanfu serve a useful economic purpose, for in that area land has been leased to Korean farmers and, by agreement with the Chinese authorities, half the rice crops are exported to Japan. By means of the Kirin-Changchun branch line, opened in 1912, the fertile wheat growing plains of the upper Sungari River have been brought under Japanese control. By the Kirin-Hailungfu-Kaiyuan line, several market towns will be tapped. The Kirin-Kwainei line will also carry the produce of this area, and further east will open up the Chientao district, which is rich in minerals.

Apart from these local economic advantages, the Japanese Government is endeavouring, by means of its railways, to capture Russian trade passing to the port of Vladivostok. At present it is trying to divert that trade by means of the South Manchuria Railway to Dairen. In due course, when through railway communication exists between Kirin and Gensan, no doubt the Japanese will likewise make every effort to divert even more of Russia's trade from Vladivostok to their Korean ports.

10. Military Aspect of these Communications.

The military operations in which Japan might become involved on the Asiatic mainland may be visualised as follows:—

(*a*) The defence of Korea.
(*b*) A conflict, with some rival Power or Powers over concessions or her claim to "paramount" interests, in South Manchuria.

The defence of Korea, in so far as communications are concerned, may be examined from two points of view—the defence of its land frontier and the defence of its sea coasts.

[1] In 1922 the crop was nearly 2 millions less, owing to drought in southern Korea and insect damage throughout the whole peninsula.

The Korean frontier, which follows, almost throughout, the courses of the Yalu and Tumen rivers, is at present badly served with lateral communication. However, the light railways and roads along the frontier, now in process of construction, will undoubtedly be of strategic value. As regards forward communications to the frontier, it seems likely, in spite of the development of road construction, that now, as in the Russo-Japanese war, any line of approach would be confined to the line of the railways.

With regard to land communications between the sea coasts, the Korean State railways connect the port of Gensan on the east coast, Fusan on the south, Chinampo and Chemulpo on the west, with Seoul, the capital. Gensan and Pingyang are also connected direct by a first class military road; and the projected line between these two places, designed to join the Pingyang-Chinampo branch line, will bring the port of Gensan and the port of Chinampo into direct communication by rail. The importance of this cross connection lies in the fact that it is situated at the narrowest part of the peninsula. These communications link up the places which the Japanese used for the landing of troops when they themselves were the invaders of Korea—

(i) In 1892 the Japanese landed troops at Fusan, and proposed, though did not succeed in the attempt, to make further landings on the west coast.

(ii) In the Sino-Japanese war in 1895 the Japanese made landings at Fusan, Gensan and Chemulpo, and made a converging movement on the Chinese forces.

(iii) In the Russo-Japanese war in 1904 the Japanese landed troops at Chemulpo and Chinampo.

It is unlikely that the Japanese would take up the Korean frontier as their line of defence, unless such a measure were forced upon them. After the experience of the Russian war of 1904–5, the Japanese General Staff are determined to meet any future threat as far inland as possible. Thus the Japanese communications in Manchuria are of strategic value both to the defence of Korea and for the launching of a campaign in Manchuria.

Japan already has railheads at Taonanfu, Changchun and Kirin; all of them bringing her appreciably near to the Chinese Eastern Railway, which may be termed the Far-Eastern section of the Russian Trans-Asian route. A concentration of Japanese troops on a wide front along the Chinese Eastern Railway would facilitate the cutting off of Russian communications by that railway with the port of Vladivostok. In this forward zone, Japan's lateral communications are far from adequate. This deficiency may well be overcome by the completion of the projected railways, which link up the railheads of Taonanfu, Changchun and Kirin with Kwainei. The total distance from Taonanfu to Kwainei is 492 miles, which is a longer distance by some 50 miles than that from Dairen to Changchun.

This lateral line—from Kwainei to Taonanfu—and, parallel with it, the Chinese Eastern Railway (if it were successfully seized by the Japanese), would afford them valuable lines of communication for a turning movement westwards in driving their enemy from the Sea of Japan.

II. Conclusion.

Both Korea and Manchuria are agricultural countries. Unlike Japan, they are not experiencing the effects of rapid industrialisation, with the result that their food supply is still adequate and their standard of life not raised. For this reason the facilities offered in Korea and Manchuria by Japan's system of communications far exceed the requirements of the local inhabitants.

From a military point of view, these communications will give Japan a greater advantage on the mainland than she possessed in 1904.

Thus the existing and the proposed construction of roads and railways in these countries is calculated :—

(i) To further Japan's aims for economic independence.
(ii) To protect the land frontier of the Japanese Empire.

CORRESPONDENCE.

[*Correspondence is invited on subjects which have been dealt with in the* JOURNAL, *or which are of general interest to the Services. Correspondents are requested to put their views as concisely as possible, and publication of letters will be dependent on the space available in each number of the* JOURNAL.—ED.]

CROSSING OF RIVERS IN WARFARE.

TO THE EDITOR OF THE R.U.S.I. JOURNAL.

SIR,—I have just read with interest Colonel Bernard's lecture on the crossing of rivers in warfare. Any of your readers who crossed the Jordan in March, 1918, or the Piave in October, 1918, will no doubt be surprised that these two important river crossings are not mentioned. Colonel Bernard certainly mentions Joshua, but does not allude to the gallant crossing by Lieut.-General Sir John Shea's (60th) Division, with the help of the Anzac Bridging Train, on 22nd March, 1918. Two crossings were effected (at Ghoraniyeh and Hajlah, the latter 3 miles from the Dead Sea) under considerable difficulties, owing to the heavy fire from the Turks hidden in the jungle on the opposite bank, and the very swollen state of the Jordan. At midnight on 23rd October, 1918, two and a half British battalions crossed the main Piave channel (1½ miles broad), although the river was in flood, in small boats and attacked the Austrian garrison on Papadopoli Island. The attackers remained in a somewhat precarious position for two days, and then, reinforced by a British and Italian Division, captured the whole island: this eventually enabled three bridges to be completed over the main channel, although the current was so strong that any breakage due to bomb or shell generally resulted in the whole bridge being swept away. Early on the morning of 27th October, after an intense bombardment, the enemy's lines on the "Austrian" mainland were rushed and three large bridgeheads were formed on the second arm of the Piave.

The element of surprise played a large part in the initial stages of the Jordan and Piave crossings.

Yours, etc.,
OSKAR TEICHMAN,
Major, R.A.M.S. (T.A.).

OLD MILITARY CUSTOMS.

TO THE EDITOR, R.U.S.I. JOURNAL.

SIR,—I was mistaken in my letter of the 21st May last in thinking that there was a similarity in the tunes played by fifes at a military funeral and by drums and fifes at réveille—and that "The Rogue's March" was also somewhat similar.

All these tunes are, I find, in the "Drum-Major's Manual" (9th edition), published by Messrs. Henry Potter & Co., West Street, Charing Cross Road.

A different, and probably the original, setting of "The Rogue's March" is found in the January, 1923, number of the *Journal of the Army Historical Research Society*, which was kindly lent me by Colonel Alban-Wilson. It is copied from

" The Compleat Tutor for the Fife " (London: Thomson & Son) about 1759–60. I recognised the tune at once, though it is 50 years since I last heard it.

The tune played at military funerals is, I find, called " The Salute " (p. 48) or " Point of War." This is, I fancy, also played just before the réveille—" Mother and Three Camps " (p. 51).

One would like to know how and when these two names " Point of War " and " Mother and Three Camps," originated.

Yours, etc.,
F. C. MAISEY, Lt.-Colonel,
Trotton Place, Petersfield.

P.S.—There were two mistakes in the printing of my letter of May last. The Sikh Bible is called the " Grunth." The 30th Punjabis were never called the 30th Punjab Rifles, but were the 30th Punjab Infantry.—F. M.

FORMATION FLYING.

TO THE EDITOR, R.U.S.I. JOURNAL.

SIR,—In the August number of the R.U.S.I. JOURNAL " Flight Lieutenant " raised certain points in connection with my article, " Some Tactical Aspects of Formation Flying," published in the May number, which require answering.

I am aware of the Air Ministry drill system, but I was writing about active service tactics and not about ceremonial flying. There is a wide difference between the two.

I chose the formation of six simply as a medium for expressing tactical principles. It is easier to dispose a formation of 3 or of 9 than to dispose one of six, and therefore I thought that a detailed description of the formation of six would give the completest indication of the methods employed.

The placing of the sub-leader between and above the last two machines—contrary to " Flight-Lieutenant's " belief—*has* been tried on active service and has proved very successful.

Yours, etc.,
OLIVER STEWART.

NAVY NOTES.

GREAT BRITAIN.

Naval Economies and Rebuilding the Fleet.

The principal events in the British Navy since the last issue of the JOURNAL have been connected with the measures of retrenchment which have become necessary in order to lessen the standing charges upon the Estimates. The chief of these measures are reductions in the pay of recruits and economies in the dockyards.

In the discussion in Parliament on the new five-year construction programme, referred to later, it was explained by the Chancellor of the Exchequer that the Treasury were anxious to postpone the beginning of the programme until 1926–27, as an easement to the finances of the country. The ultimate decision of the Cabinet was that the programme ought not to be delayed, and that the Admiralty should make economies to balance the cost of the starting of the ships in 1925–26. This the Board is now doing.

On 10th August, Port Orders at Portsmouth issued by Admiral Sir Sydney Fremantle contained a statement headed "Economy" which explained that the rebuilding of the Fleet must throw a very serious burden upon the financial resources of the country, and enlarged upon the need of restoring the economic position. "Collapse of world-power and prestige would follow as readily upon bankruptcy as upon loss of military power," said the Commander-in-Chief. The Admiralty realised, he said, that the measures in contemplation might militate against the comfort of Fleet *personnel*. They trust, therefore, that officers and men will cheerfully accept any inconvenience or discomfort which may accompany them.

GOVERNMENT ECONOMY COMMITTEE.—To assist the fighting Services in making economies, a Government Committee was appointed in the first week of August, consisting of Lord Colwyn (Chairman), who presided over the Committee which investigated the question of mercantile construction in the dockyards in 1919; Lord Bradbury, formerly Permanent Secretary to the Treasury; and Lord Chalmers, late Joint Secretary to the Treasury and Chairman of the Board of Inland Revenue. Before this Committee got to work, however, the Admiralty had planned a number of cuts in their expenditure, the chief of which are as follows:

DESTROYER DEPÔT AND REPAIR SHIPS PAID OFF.—A decision that destroyer flotillas shall in future rely upon dockyards for repair facilities was communicated to the Fleet on 13th August. No new destroyer depôt ship or repair ship is to be laid down. Repair parties and spare crews cease to be provided, and there will be a corresponding reduction in accountant staff. In the Home Commands, Reserve Fleet, this involves the paying off for sale of the "Dido" (Portsmouth), "Hecla" (Chatham), and "Woolwich" (Devonport), the respective Captains (D) being transferred to flotilla leaders. A fortnight later, the "Diligence" was ordered to be sold; the "Sandhurst" and "Greenwich" to be withdrawn from service and one of them sold; and the "Blenheim" sold, the last-named being the depôt-ship of the Central Reserve of Minesweepers.

CRUISERS AND DESTROYERS TO BE SOLD.—In the fighting fleet, the cruisers "Southampton" and "Dublin" were ordered to be prepared for sale; and their sister-ship, the "Chatham," to be placed on the sale list after her relief by the "Effingham" as flagship in the East Indies. The "Boadicea" was also passed for sale. No more destroyers of the "R" class, designed in 1915 and completed in 1916–17, were to be taken in hand by the dockyards for any purpose pending further instructions. These were forthcoming on 10th September, when it was announced that the flotilla leader "Nimrod" and 17 destroyers, including 15 of the "R" type, were to be placed on the sale list forthwith. This action reduced the number of the type on the effective list from 46 to 31. The coastal motor-boat base at Haslar was ordered to be closed down.

CLOSING DOWN OF ROSYTH AND PEMBROKE DOCKYARDS.—On 2nd September it was announced that the dockyards at Rosyth and Pembroke would be closed down and reduced to a care and maintenance basis as soon as it was possible to finish or transfer the work actually in progress there, *i.e.*, the buildings and plant would, in future, be maintained in such a state as would enable the establishment to be opened again in case of need. Under this policy, the discharge of about 1,200 men from the two yards became necessary in September, this total to be increased to 3,000 by the end of the financial year. The decision aroused considerable opposition locally. Protest meetings were held at Cardiff and elsewhere and deputations representing the localities concerned were received by members of the Admiralty Board. On 21st September the issue of further notices was suspended at both yards.

THE PRINCE OF WALES'S CRUISE.

His Royal Highness the Prince of Wales concluded his seven months' tour to West Africa, South Africa, and South America on 16th October, when the battle-cruiser "Repulse," Captain H. W. W. Hope, C.B., D.S.O., returned to Portsmouth, which she had left on 28th March previously. The "Repulse" left Cape Town on 29th July, and after a call at St. Helena arrived off Montevideo on 14th August, where the Prince transferred to the "Curlew," Captain H. D. Bridges, D.S.O., which had come down specially from the North American Station to meet him and take him up to Montevideo and Buenos Aires. Meanwhile, the "Repulse," owing to her size, visited Mar-del-Plata. The Prince re-embarked in the "Curlew" at Buenos Aires on 26th September, and transferred to the "Repulse" again off Montevideo next day, leaving for the United Kingdom *viâ* St. Vincent. The "Curlew," which was ordered home to recommission, called at St. Vincent and Funchal *en route*.

THE FLAG LIST.

PROMOTIONS.—Consequent on the retirement, at his own request, of Admiral Sir A. L. Duff, G.B.E., K.C.B., K.C.V.O., to date 1st July, Vice-Admiral Sir W. C. M. Nicholson, K.C.B., was promoted to Admiral, Rear-Admiral C. Maclachlan, C.B., to be Vice-Admiral, and Captain W. D. Paton, D.S.O., M.V.O., A.D.C., to be Rear-Admiral. On 16th July the retirement took place of Rear-Admiral C. R. Payne, C.B.E., whereby Captain Lionel G. Preston, C.B., late in command of the aircraft-carrier "Eagle," was promoted to flag rank.

VICE-ADMIRAL EVERETT.—On 12th August, Vice-Admiral Sir Allan F. Everett, K.C.M.G., K.C.V.O., C.B., who earlier in the year had returned home from the China Command owing to ill-health, was placed on the retired list. In consequence,

Rear-Admiral John Luce, C.B., was promoted to Vice-Admiral, to date 12th August, and placed on the retired list with effect from the following day. Captain Wilfrid Nunn, C.B., C.S.I., C.M.G., D.S.O., A.D.C., was promoted to Rear-Admiral from 12th August. In accordance with the decision to reduce gradually the Flag list, no further promotion was made in consequence of the retirement of Vice-Admiral Luce.

FURTHER REDUCTION.—On 14th October, Admiral Sir William C. M. Nicholson was placed on the retired list, at his own request. A further reduction in the Flag List was then made, no promotion taking place in consequence of this retirement. In November, 1918, the figures were:—Admirals, 15; Vice-Admirals, 22; Rear-Admirals, 63. In October last the state of the Flag list was:—Admirals, 10; Vice-Admirals, 19; Rear-Admirals, 49.

PERSONNEL.

REVISED RATES OF PAY.—On 2nd October, revised rates of pay for entrants into the Royal Navy and Royal Marines on or after 4th October were published in Fleet Orders. One order dealt with alterations in the pay of junior officers (other than Cadets and Midshipmen) up to and including the relative rank of Lieutenant; the other with the new rates of pay for the men. The former states that the new rates will apply to those entering in future, including Naval Cadets who had not passed out of the R.N. College, Dartmouth, before 5th October; to those promoted to Mate or Mate (E) from this date; or those granted a commission in the Royal Marines under Appendix X, Part VI*b*, Clause 2, King's Regulations and Admiralty Instructions. Special entry Cadets, Naval Cadets from the Mercantile Marine training establishments, and probationary Officers, R.M., entered direct by examination, whose date of entry was before 5th October, will come under the old rates of pay. The new rates of full pay will apply to officers of the R.N.R. and R.N.V.R. entered on the permanent lists of those reserves, and to officers entered in the Special Reserve of Royal Marines on or after 5th October, when undergoing training or being otherwise eligible for full pay. Officers entered as probationary officers before this date will come under the old rates of pay.

COMPARISON OF CURRENT AND NEW RATES.—These new rates of pay for officers will be subject to revision on 1st July, 1927, and triennially afterwards, in the same manner as rates of pay generally. The following table shows typical reductions:—

Rank.	Old Standard. Rate.	New Standard. Rate.	Current. Rate.
	£ s. d.	£ s. d.	£ s. d.
Acting Sub-Lieutenant	182 10 0	155 2 6	146 0 0
Mate	292 0 0	255 10 0	240 5 10
Lieutenant, on promotion	310 5 0	273 15 0	258 10 10
Mate (E)	346 15 0	310 5 0	292 0 0
Engineer-Lieutenant and Lieutenant (E), on promotion	365 0 0	328 10 0	310 5 0
Paymaster Lieutenant, on promotion	310 5 0	273 15 0	258 10 10

FIRST COMMANDERS (E).—Promotions were published by the Admiralty on 7th August, dated back to 30th June, of the first Commanders (E), the officers advanced being Lieutenant-Commanders (E) A. L. P. Mark-Wardlaw, J. P. Charley, J. B. Sidgwick, and G. C. Malden. These officers entered the Royal Naval College at Osborne in the first two batches of Cadets under the scheme of common entry

and training, in September, 1903, and January, 1904, and were appointed to specialise in engineering in October, 1913, as Lieutenants.

OFFICERS' RETIRED PAY.—New regulations dated 7th August were approved, in substitution for all previous rules, for officers of the R.N. and R.M. serving in the Inspection, Experimental, and Compass Departments. They have effect from 1st February, 1919, for officers serving on that date in any of the posts concerned, as well as officers appointed to any of them thereafter. For officers on the staff of the Compass Department, they have effect from 1st April, 1920, and apply to all officers then serving as well as those subsequently appointed.

UNEMPLOYED PAY.—The direction that the accounts of naval officers in receipt of unemployed pay at the full pay rate were to be kept on a special list (100) of the depôt ledgers was cancelled by a Fleet Order dated 28th August. In future, officers appointed to unemployed pay from an effective appointment direct are to be entered on list 15, and officers already borne on this list for passage or full pay leave are, when appointed to unemployed pay, to be continued on that list. In order that effective and non-effective pay may be clearly distinguished, certain special instructions are to be strictly observed. The new procedure is designed to avoid the necessity of transferring from one list to another the accounts of supernumerary officers borne whilst on passage or for a period of full pay leave prior to their entry for unemployed pay.

DEPUTY JUDGE ADVOCATE.—The office of Deputy Judge Advocate of the Fleet, which Paymaster-Captain H. W. E. Manisty, C.B., C.M.G., took up on 1st July, has been transferred from Portsmouth to the Royal Naval College, Greenwich.

RECRUITING AND ARTIFICERS.—A new feature of the quarterly schedule of recruiting for the Royal Navy and Royal Marines for the period ending 30th September was the entry of 21 engine-room artificers, ten at Portsmouth and 11 at Chatham. Entry to this rating direct had been closed for some time, the artificer apprentices' establishment in the "Fisgard" having supplied sufficient ratings. The trades in which there were vacancies were:—Fitters, or fitters and turners, eight at Portsmouth and seven at Chatham; boiler-makers, two at Chatham; pattern-makers and moulders, one of each trade at Portsmouth and Chatham. The rating of E.R.A. did not appear in the list of those in which recruiting was open during the December quarter.

MESS GEAR ECONOMY.—Articles of china supplied to C.P.O.s' and P.O.s' messes were ordered early in September to bear the same badge, the naval crown. This assimilation of patterns will enable a smaller total reserve of china to be carried on board H.M. ships.

NEW CORRESPONDENCE COURSES.—As an adjunct to the vocational training courses already being carried out, arrangements were notified on 7th August for the introduction of correspondence classes by the International Correspondence Schools, Ltd., Kingsway. The primary object is to fit men serving afloat for the practical vocational instruction which is carried out at the fleet bases and home ports. The courses will be controlled by the Commanders-in-Chief and the Adjutant-General, Royal Marines, *liaison* with the I.C.S. being maintained by the Captain of the Naval Personnel Committee, Admiralty.

Material.

New Construction Programme.—Following on the announcement of the new naval construction programme by the Prime Minister on 23rd July, as recorded in the last issue of the Journal, a Supplementary Estimate of £100 was presented, and discussed in the House of Commons on 29th July. The proportion of the cost of the new programme expected to be incurred during the current financial year is £527,170. Authority was sought to meet this additional expenditure by reduced expenditure in other directions, to the extent of £80,000 by utilising anticipated surpluses of appropriations-in-aid, and for the grant of an additional sum of £100 to make good the anticipated net deficiency. The saving of £447,070 was to be made as follows:—Wages, etc., of officers, men and boys, £150,000; provisions and messing allowance, £120,000; seamen's clothing, soap and tobacco, £57,070; and fuel and lubricating oils, £120,000.

Evolution of the Programme.—In the debate on this Supplementary Estimate, Mr. Churchill, the Chancellor of the Exchequer, related the stages of evolution of the programme. He said that original diversity between the Admiralty and the Treasury was inevitable and highly proper. When, therefore, he was presented in December with Estimates which would seriously have compromised the whole finances of this Parliament, he set himself to discuss the matter, starting with the determination to have a scheme covering a number of years. After three or four months of discussion, the Admiralty produced textually the present programme, which he at once accepted, but he asked that it should start next year instead of this, unless the Admiralty could produce economies to justify an earlier beginning. This was the only point referred to the Cabinet, which had decided that building should start at once and the Admiralty find economies to offset the cost of acceleration. He supported the programme because the menace was a very real one—namely, that ships built in groups were wearing out in groups. The policy was merely to rebuild the Fleet, but never in excess of a one-Power standard, both qualitative and quantitative. It would not necessarily cost anything (though large net savings could not be expected), for the immediate task of the new Committee was to propose reductions in the cost of the fighting Services adequate to meet the new expenditure. This, of course, would not mean any delay in the similar review of the Civil Departments to be conducted by the parent Cabinet Economy Committee. On the whole, though, had he been a dictator, the programme might have been different, he thought it a proper balance of the claims of economy and defence.

New Programme Tabulated.—A White Paper (Cd. 2,476) gives the details of the new naval programme of the Government, as follows:—

"The existing programme of construction in Navy Votes, 1925–26, provides for progress on two battleships ('Nelson' and 'Rodney'), five cruisers ('Kent' class), three cruisers ('Effingham,' 'Emerald,' and 'Enterprise' to be completed), one minelayer, two destroyers, three submarines (one 'O' class; two 'L' class to be completed). The total provision in Navy Estimates for the above programme is £6,708,567, but if construction proceeds uninterruptedly and accounts can be liquidated punctually, the total expenditure may prove to be about £7,647,000, or about £939,000 more, and the amount remaining to be met in subsequent years is £10,158,000, or £9,219,000, if the £939,000 is paid in 1925–26.

"It is proposed to adopt the following programme of new construction in the years 1925–26 to 1929–30:—

——	1925–26.	1926–27.	1927–28.	1928–29.	1929–30.
Cruisers—					
Class "A"	4	2	1	1	1
Class "B"	—	1	2	2	2
Aircraft carriers	—	—	—	—	1
Destroyers	—	—	9	9	9
Submarines, "O" type ...	—	6	6	6	5
Do., Fleet type	—	—	—	—	1
Gunboats	4	—	—	1	—
Motor launches	—	4	—	—	—
Submarine depôt ships ...	—	1	—	1	—
Net layer	—	—	—	—	1
Repair ship	—	1	—	—	—
Floating dock	1	—	—	—	—

"Together with the necessary steam and motor boats, the total cost of the above programme is estimated at £58,000,000. The cost which it is expected will fall on Navy Votes for 1925–26 to 1929–30 in respect of this programme is £37,670,000. The total expenditure falling to be met year by year in the above period if construction proceeds uninterruptedly is:—

——	1925–26.	1926–27.
	£	£
Old programme	7,647,000	6,954,000
New programme	527,170	3,724,000
	8,174,170	10,678,000

——	1927–28.	1928–29.	1929–30.
	£	£	£
Old programme	2,197,000	68,000	—
New programme	8,526,000	11,997,000	12,896,000
	10,723,000	12,065,000	12,896,000

"In the light of all past experience, however, it is reasonable to anticipate that payments will not fall due at the above rate, and a deduction of 10 per cent.

or more over part of the programme will almost certainly be made in order to arrive at the estimates laid before Parliament in any given year."

BUILDING PLANS.—On 26th August it was announced that the Admiralty had decided that the two cruisers which were to be laid down in October will be built at the Royal Dockyards of Portsmouth and Devonport, and that the other two, which are to be laid down in February, will be built by contract in private shipbuilding yards. The four gunboats included in the programme will be built by contract.

H.M.S. "NELSON" LAUNCHED.—The battleship "Nelson," of the 1922–23 programme, one of the two capital ships authorised to be built by the British Empire under the Washington Treaty, was launched from the Walker yard of Messrs. Armstrong, Whitworth & Co., Ltd., on 3rd September. Dame Caroline Bridgeman, wife of the First Lord, performed the naming ceremony, and Mr. Bridgeman spoke at the subsequent reception. Sir Eustace Tennyson d'Eyncourt said they had been working on the "Nelson" for a little over two-and-a-half years, and hoped to finish her in a year. She was the 102nd ship the firm had launched for the Navy.

CRUISERS COMPLETING.—The cruiser "Effingham" was commissioned at Portsmouth on 2nd July, and left on 25th August for the East Indies Station to relieve the "Chatham" as flagship of Vice-Admiral Herbert W. Richmond, C.B., Commander-in-Chief. She arrived at Colombo on 23rd September, and the transfer having been effected, the "Chatham" left there on the 28th for Devonport to pay off on to the disposal list. The new cruiser "Emerald," to be finished at Chatham in December to relieve the "Colombo," has been transferred to Devonport for manning purposes; and the "Enterprise," to be finished at Devonport in March, 1926, to relieve the "Cairo," has been transferred to Chatham for manning purposes.

NEW MINELAYER.—There is also completing afloat at Devonport the minelayer "Adventure," laid down in November, 1922, and launched in June, 1924. She is of the cruiser type, of about 7,000 tons, and certain of her guns have been sacrificed to allow for the carriage of mines. This is the first minelayer in the Royal Navy to be designed chiefly for minelaying, all previous carriers having been adapted from other duties. A noteworthy innovation in regard to her propelling machinery is the installation of Diesel oil engines for use at cruising speeds.

ORGANISATION AND DISTRIBUTION.

THE SINGAPORE BASE.—Captain Hugh S. Shipway, R.N., has been selected for appointment to H.M.S. "Hawkins," additional, for duty at Singapore on the staff of Vice-Admiral Sir E. S. Alexander-Sinclair, and as Captain-in-Charge, Singapore, from the date of his beginning duty. Although Captain Shipway is the third officer of his rank to be appointed for duty at Singapore since it was decided to extend the base there in the summer of 1921, he is the first to be given the status of Captain-in-Charge, and is much senior to the officers who have preceded him. Captain Shipway was to leave for the East in time to begin duty about 1st December.

FLOATING DOCK FOR MALTA.—On 1st August, the extension to No. VIII. (ex-German) floating dock, which had been built at Chatham Dockyard to the designs of Sir Eustace d'Eyncourt, was towed away from Sheerness on its

2,300-miles journey to Malta. Commander K. N. Humphreys, King's Harbour Master at Plymouth Sound, was in charge of the towage operations, five tugs being placed at his disposal. The destroyer "Sabre," of the Nore Reserve, escorted the section to Ushant; the "Tuscan," of the Devonport Reserve, from Ushant to Cape Finisterre; the "Splendid," from the Gibraltar Reserve, from Finisterre to Gibraltar; and the "Voyager," of the Mediterranean Fleet, from Gibraltar to Malta. The additional section has increased the length of the dock to nearly 1,000 feet, and its lifting capacity from 40,000 to 60,000 tons.

Cruiser Relief.—After an extensive refit at Devonport at a cost of some £113,800, the cruiser "Comus" on 8th September relieved the "Carysfort" in the Second Cruiser Squadron, Atlantic Fleet, Captain G. F. B. Edward-Collins and the crew of the latter ship turning over to the "Comus." The "Carysfort" was at first ordered to Rosyth for overhaul and retubing, to pay off into dockyard control on arrival, but the decision to close down the yard altered this, and she remained at Devonport.

China Reinforcements.—Owing to the situation in China, the aircraft-carrier "Hermes," Captain C. P. Talbot, D.S.O., was transferred there temporarily from the Mediterranean, leaving Malta on 15th July and arriving at Hong Kong on 10th August. The cruiser "Cairo," Captain E. O. Cochrane, was also transferred from the East Indies, leaving Trincomalee on 22nd July and arriving at Hong Kong on the 31st. Six small craft, named the "Doan Joas," "Hong Wah," "Kwang Lee," "Wing Lee," "Tungon," and "Tongkwong," have been commissioned temporarily for special service at Hong Kong.

Exercises and Cruises.

Atlantic Fleet.—The annual pulling regattas for cruisers, destroyers, submarines and "H" group took place in Torbay during the week beginning 13th July, and the Fleet sailing regatta at Portland in the week following. Summer leave began on 30th July. Leaving their Home Ports on 31st August, or as soon after as available, the squadrons and flotillas went to various bases until 14th September, when all proceeded to Invergordon, carrying out exercises *en route*, and they were stationed at this base until 19th October. The Second Cruiser Squadron was then to make an independent cruise to East Coast ports.

Mediterranean Fleet.—The Mediterranean Fleet left Malta on 5th August for a cruise in the eastern part of the Station, to last until October. It first proceeded to Corfu, Argostoli, Imbros, Lemnos, Thaso, and other places in the Ægean. Later it was at Volo, Milo and Suda Bay. A special feature was the visit to Black Sea ports by the First Cruiser Squadron, Varna, Constanza, Galatz and other places seeing one or more ships. At Varna, Rear-Admiral A. K. Waistell, C.B., paid an official visit to King Boris at Euxinograd Palace, and the King afterwards visited the "Frobisher" and was entertained to luncheon.

Visit to Japan.—The special conditions obtaining in China have interfered with a normal cruising programme during the summer. On 15th September the flagship "Hawkins" arrived at Yokohama, and Sub-Lieutenant H.R.H. Prince George landed and went on to Tokio for an unofficial visit, staying at the British Embassy.

Ships in Canada.—With the return to St. George's Bay, Newfoundland, on 15th August of the "Constance," after recommissioning at Chatham, all the ships on the North America and West Indies Station were in Canadian waters

except the "Curlew," which had gone South to meet the Prince of Wales. The flagship "Calcutta" and the "Constance" left Bermuda on 6th June, and the former was absent from the base until 1st October. The "Capetown" also left Bermuda on 6th June for a four months' cruise in the Pacific, *viâ* the Panama Canal. Probably in no summer since the war have the Canadian ports seen so much of the British warships.

Naval Occurrences.

Merchant Ship Signalling.—A high standard of efficiency continues to be shown by the practices in signalling carried out between H.M. ships and merchant vessels. During the quarter ended 31st March last a total of 1,293 exercises was carried out, as compared with 1,582 for the previous quarter, and 1,205 for the corresponding period of 1924. The percentage of failures worked out at 3·24.

Orkneys War Memorial.—On 29th September the memorial cross erected by the Imperial War Graves Commission in the naval war cemetery at Lyness, Orkney, was unveiled by Sir W. Watson Cheyne, Lord-Lieutenant. The Navy was represented by H.M. ships "Revenge" and "Mackay."

THE FLEET AIR ARM.

Return of the "Furious."—Having undergone extensive alterations at Devonport Dockyard since June, 1922, the aircraft-carrier "Furious," Captain John L. Pearson, C.M.G., was commissioned on 1st September for duty in the Atlantic Fleet in place of the "Argus," Captain S. L. Willis, which was ordered to be taken in hand for large repairs at Chatham on 1st November. The appearance of the "Furious" has been greatly changed, and her funnel and mast removed.

Wireless Men for Aircraft.—The Admiralty announced at the end of July that a limited number of volunteers was required from the wireless branch of the Navy for duty as operators and aerial gunners in aircraft of the Fleet Air Arm. Accepted candidates were required to undergo a course of training in aircraft W/T sets and in aerial gunnery. Extra pay of 1*s.* a day during preliminary training, and thereafter 2*s.* a day continuously, whilst detailed, is given.

(*See also "Air Notes," p.* 805.)

DOMINION NAVIES.

Australian Training Ship.—The sloop "Mallow," from the Reserve at Sydney, has been commissioned with a special reduced complement for service as training ship for the Royal Australian Naval Reserves, and is attached to the Melbourne Port Division. She is one of the "flower" class sloops presented to the Royal Australian Navy in 1919.

Surveying Ships.—The new Australian surveying ship "Moresby" (formerly the sloop "Silvio") arrived at Thursday Island on 31st August and Brisbane on 10th September, meeting there the sloop "Geranium." The two vessels were ordered to leave on 21st September for surveys, the "Moresby" for the Great Barrier Reef, using Townsville as a base; and the "Geranium" to make a survey of Palm Passage, using Townsville or Gladstone as base. Both were to return to Sydney about the middle of December.

SECOND NEW ZEALAND CRUISER.—H.M.S. " Diomede " returned to Portsmouth on 28th August from the China Station, where she had been serving since her completion in 1922, and where the " Concord " has temporarily replaced her. The vessel was taken in hand at Portsmouth to be fitted out for service in the New Zealand Navy, the Dominion Government having agreed in 1924 to maintain a second cruiser of similar type to the " Dunedin," already there.

CANADIAN DESTROYER'S CRUISE.—A cruise to coast towns on the Pacific side of Canada and the U.S.A., the first of its kind by such a vessel of the Canadian Navy, was made from August to October by the " Patrician," Lieutenant W. J. R. Beech, R.C.N. From 22nd August to 23rd September, the vessel cruised in company with the Imperial cruiser " Capetown," Captain G. H. Knowles, D.S.O., visiting Port Augusta, Vancouver, San Francisco, and San Pedro. After the " Capetown " had parted company to return to Bermuda *viâ* the Panama Canal, the " Patrician " went to Portland, Oregon, and was scheduled to return to Esquimalt on 10th October.

TRANSPORT FOR DEPENDENTS.—A new Canadian naval order provides that free ocean transport from Canada to England shall be granted for the dependents of officers and men of the Royal Canadian Navy who are sent for service with the Royal Navy for a period of two years, and similarly the dependents of such officers and men are to be granted free ocean transportation from England to Canada on the completion of two years' service. " Dependent " means wife or son under 16, or daughter under 17, subject, however, to the discretion of the Minister in special cases.

FOREIGN NAVIES.

ARGENTINE.

CONSTRUCTION PROGRAMME.—At the end of September, the Senate approved a Bill for the expenditure of 200,000,000 pesos (£40,000,000) for new cruisers, submarines and aircraft carriers.

TRAINING SHIP IN ENGLAND.—A visit was paid during September by the training ship " Presidente Sarmiento " to Birkenhead, where she was launched on 31st August, 1897. She is a vessel of about 2,800 tons, barque rigged, and has for many years been employed in the training of cadets.

FRANCE.

VISITS TO BRITISH PORTS.—The despatch vessel " Ancre " visited Edinburgh from 26th to 28th August, and Portsmouth in the first week of September. The " Ville d'Ys," a British-built vessel of similar type, has cruised in North American waters during the quarter, visiting Quebec, St. John's, N.F., Halifax, N.S., and Sydney, C.B. The " Somme," " Meuse " and " Glaive " were in the Channel Islands in the latter part of July, and from 26th to 28th August visited Hull and Grimsby. The gunboat " Alerte " was announced to visit Bombay, Colombo, Sabang and Singapore during October and November.

SPEED IN WARSHIPS.—Of the 30 new vessels due to join the French Fleet this autumn and winter, states the Paris correspondent of the *Naval and Military Record*, the minelaying submarines " Callot " and " Chailley " and the 1,500-ton submersibles of the " Réquin " type are giving great satisfaction. The destroyer

"Tigre," of 2,400 tons, was having slight defects to her Rateau turbines dealt with at Lorient in September, after highly promising trials. The Breguet-turbined "Léopard" is ready at St. Nazaire, and a stiff fight is promised between the two French turbine types. The "Duguay-Trouin," first of the three 7,800-ton cruisers, is ready for sea. Parsons-geared turbines are fitted in this class, which are designed for 34 knots. Probably never before did France make so determined a bid for speed in her warships.

NAVAL REVIEW.—On 16th July, a review of the French Fleet at Cherbourg was made by President Doumergue, accompanied by M. Borel, Minister of Marine, from the conning tower of the new submarine "Souffleur," of 1,438 tons. Two other submarines, the "Réquin" and "Gustave Zédé," carried Deputies and Pressmen. The forces present included the Mediterranean Squadron under Admiral Dumesnil and the Channel and North Sea Divisions under Rear-Admiral Docteur. There were in line six battleships, twelve destroyers, nine torpedo boats, 25 submarines, and patrol vessels, minesweepers and aircraft. The President boarded Admiral Dumesnil's flagship, the "Provence," and was entertained to luncheon on board the battleship "Paris." Later he inspected the dockyard and drove the first rivet of the submarine "Rédoutable."

GREECE.

TORPEDO CRAFT MODERNISED.—An addition to the efficiency of the Greek Torpedo Flotilla has been made by the thorough overhaul of the "Aetos," "Leon," "Panther" and "Jerax" at the yard of Messrs. J. S. White & Co., East Cowes. They have been fitted to burn oil fuel only, and their equipment brought up to date. Messrs. Vickers, Ltd., have also modernised the armament, and fitted a new 3-inch anti-aircraft gun to each vessel.

ITALY.

SUBMARINE LOST.—The submarine "Sebastiano Veneiro" was reported missing on 28th August after manœuvres between Cape Passero and Cape Murro di Porco. Captain Vandone, one of the most experienced Italian submarine officers, was in command. On 3rd September the wreck was located at a depth of 100 ft. near St. Murro di Porco, about five miles from Syracuse, owing to large patches of oil on the water; but there was, of course, no hope for any of the crew.

ANNUAL MANŒUVRES.—Admiral Diego Simonetti was in command during the annual fleet manœuvres which began on 23rd August, when the problem set was the prevention of an enemy fleet, already in possession of Sardinia, from capturing Sicily and thence attacking the Italian Colonies on the North African coast. The defending fleet was based on Augusta, on the east coast of Sicily. The manœuvres were witnessed by the King of Italy from the royal yacht "Savoia."

JAPAN.

TRAINING CRUISE.—In the course of her cruises with naval cadets, the cruiser "Iwate" is to call at the following British ports:—Kong Kong, 27th November–1st December; Singapore, 14th–19th December; Fremantle, 9th January, 1926; Adelaide, 16th–20th January; Melbourne, 22nd–28th January; Hobart, 30th January–3rd February; Sydney, 6th–12th February; Wellington, 18th–23rd February; and Auckland, 26th February–3rd March.

ESTIMATES AND PROGRAMME.—Published in July, the Navy Estimates for the coming year totalled £24,000,000. A Reuter telegram from Tokio stated that, as compared with the current year, the Estimates showed an increase of

about £5,000,000, but they were liable to be cut down drastically in the coming session of the Diet. The Ministry of Marine is asking for £26,600,000 for the replacement of auxiliary craft during the next five years, arguing that after 1931 the yards will be occupied with the replacement of capital ships in accordance with the Washington Treaty.

RUSSIA.

FLEET MANŒUVRES.—The *Hamburg Correspondent*, in its issue of 6th July, called attention to the visit of the Russian Baltic Fleet to the Great Belt, where the Russian forces were more powerful than those of all the other Baltic States. They consisted, said this journal, of the two battleships "Marat" and "Paris Commune," each armed with twelve 12-in. guns, and six destroyers, each of 1,400 tons and a speed of 33 knots. All burnt oil fuel and were accompanied by a tank vessel. Several weeks later, Zoff, the chief of the Soviet naval forces, reviewing the lessons of the cruise, stated that the manœuvres were satisfactory, but that the Soviet warships are now obsolete and incapable of guarding adequately the approaches to Leningrad.

PROPOSED BUILDING PROGRAMME.—From this, M. Zoff argued the necessity of a new programme of naval construction to bring the Fleet up to date, especially in view of the creation of a Polish naval base and the extension of the fleets of the Baltic States "under British instruction." It may be recalled that a similar intention to build new vessels was announced after the manœuvres of 1924, when a building programme was published for two cruisers and four destroyers for the Baltic; four cruisers, eight destroyers, eight submarines, and six mining vessels for the Black Sea; and six gunboats for the Far East.

UNITED STATES.

FLAG APPOINTMENTS.—New appointments of Flag Officers in the United States Navy include the following:—Rear-Admiral Roger Welles to succeed Vice-Admiral Philip Andrews in command of the Naval Forces in Europe; Vice-Admiral Andrews to command the 1st Naval District; Vice-Admiral H. A. Wiley to be a member of the General Board; Rear-Admiral M. M. Taylor to join the staff of the Chief of Naval Operations, in charge of the Fleet Training Section; Rear-Admiral C. F. Hughes to be Commander-in-Chief of the Battle Fleet; Admiral S. S. Robinson to be Commander-in-Chief of the U.S. Fleet; Rear-Admiral H. H. Christy to command the Control Force; Admiral Thomas Washington to command the 12th Naval District; Admiral R. E. Coontz to command the 5th Naval District; Rear-Admiral W. C. Cole to be Commandant of Norfolk Navy Yard; Rear-Admiral W. D. MacDougall to be Commandant of Portsmouth Navy Yard; Rear-Admiral L. R. de Steiguer to command the 4th Battleship Division; and Vice-Admiral R. H. Jackson to command the Battleship Division of the Battle Fleet.

SUBMARINE RAMMED AND SUNK.—On the night of 25th September, submarine "S. 51," Lieutenant Rodney Dobson, was rammed and sunk by the steamer "City of Rome," from Savannah to Boston, and six officers and 28 men went down in her. The steamer struck the submarine on her port side forward, and three men who were in their bunks at the time, near the conning tower, were floated out through the opening and reached the surface. Salvage craft were quickly on the spot, and divers descended, but were unable to establish communication with the crew. On the morning of the 29th, the body of an engineer was found in the battery room. Rough weather hampered the salvage operations, but from the first there was little chance of releasing alive the imprisoned seamen.

SEAPLANE'S NINE DAYS' DRIFT.—On 31st August, two large seaplanes, belonging to the U.S. Navy, started from San Francisco to attempt a non-stop flight to Hawaii, the distance of 2,100 miles being estimated to occupy 26 hours. One machine came down when some 300 miles out, owing to failure of oil pressure, and was towed back. The other, P.N.9, No. 1, after covering the distance to within 150 miles of Mauii Island, of the Hawaiian group, was forced down by the exhaustion of petrol into a rough sea. Her plight being notified by wireless, all available craft began an immediate seach, but nothing was found until 10th September, when submarine "R.4" came upon the seaplane about 15 miles north-west of Kauai Island, whither it had drifted about 450 miles westward from the spot where it was forced down. Though wearied by their vigil and exposure, the crew of five, under Commander John Rodgers, U.S.N., were in good health, and decided to remain in the seaplane and be towed to land in order technically to complete their trip to Hawaii. The search had actually been abandoned, and "R. 4" was returning to base, when the discovery was made. During the nine days' drift, the seaplane listened in to wireless reports regarding the search, but was unable to reply. One message thus overheard was that a conference of 21 pilots had agreed that the seaplane and crew would never be found. The hull was intact, but rough seas had damaged the wings, from which the crew had stripped the fabric to catch rain-water for drinking purposes. Commander Rodgers was appointed, on the day after his rescue, as Assistant Chief of the Bureau of Naval Aeronautics.

LOSS OF THE "SHENANDOAH."—Disaster overtook the Aerial Branch of the United States Navy on 3rd September, when the airship "Shenandoah" was broken into three pieces during a storm near Sharon, Ohio. The vessel, originally known as "ZR.1," was designed by the U.S. Bureau of Naval Aeronautics, and built in 1923 at Lakehurst, New Jersey, on Zeppelin lines. She was 680 ft. long and had a capacity of 2,115,000 cubic feet, with six 300-H.P. Packard engines, which gave her a maximum speed of 60 miles an hour. Commander Zachary Lansdowne, U.S.N., the commanding officer, was among the 13 killed out of her crew of about 40. He made the Transatlantic flight in the British airship "R.34" in 1919. Official messages of sympathy were sent by Sir Samuel Hoare, Secretary for Air, to the Secretary of the Navy Department, Washington; and by Air Chief Marshal Sir H. M. Trenchard, Chief of the Air Staff, to Rear-Admiral William A. Moffett, Chief of the Bureau of Naval Aeronautics.

(See also Airship Notes, p. 820.)

SIR FREDERICK RICHARDS' MEMORIAL FUND.

The periodical meeting of the Selection Committee of the Admiral of the Fleet Sir Frederick Richards' Memorial Fund was held on the afternoon of Trafalgar Day at the Royal United Service Institution. Vice-Admiral Sir Douglas R. L. Nicholson, K.C.M.G., K.C.V.O. (Chairman of the Fund), presided.

The Sir Frederick Richards' Memorial Fund was established with the object of assisting necessitous Naval and Marine officers and their families, and of giving to them grants for educational purposes. Applications for assistance are continually increasing. They are, of course, regarded as confidential.

Applications and donations should be sent to the Chairman of the Sir Frederick Richards' Memorial Fund, care of the Westminster Bank, 21, Lombard Street, London, E.C.3.

ARMY NOTES.

HOME.

Regular Forces.

Scholarships for Sons of Army Officers.—A limited number of boys may be nominated by the Army Council for admission to a Competitive Examination to be held at Brighton College on 1st and 2nd June, 1926, for one Gill Memorial Scholarship of the annual value of £81, and several Gill Memorial Exhibitions of the annual value of £60. This Scholarship and the Exhibitions are each tenable for three years, or, on the recommendation of the Headmaster, the period may be extended to four years.

Candidates for nomination must be (1) under 14½ years of age on 1st June, 1926; and (2) sons of officers of the Regular Army (serving or retired), or, if such are not available, sons of officers of the Special Reserve or Territorial Army.

Applications (accompanied by Birth Certificates and Certificates of Conduct covering the two previous years) should reach the Permanent Under-Secretary of State for War, the War Office, London, S.W.1., not later than 1st April, 1926.

Commissions in the Tank Corps.—The Army Pay Warrant has been amended so as to provide that a cadet who has passed through the Royal Military College, Sandhurst, or a cadet of the Royal Military College, Kingston, Canada, may be given a commission as second lieutenant in the Royal Tank Corps. Hitherto first commissions on passing out have been only to the Cavalry, Infantry, or Royal Army Service Corps. Cadets who entered the Royal Military Academy, Woolwich, prior to the Army Entrance Examination held in June, 1924, and who volunteer for the Royal Tank Corps can be accepted.

Technical Training in the Army: a Career for Boys.—It is officially announced that in November next there will be vacancies for about 200 to 250 boys at the Boys' Technical School, Chepstow, the Signal School, Catterick, and other military centres. Candidates for the vacant places, who must be 14 but under 15 years and four months on 1st January, 1926 (*i.e.*, their dates of birth must be between 1st September, 1910, and 31st December, 1911, inclusive), will be selected by competitive examinations to be held on 3rd November at London, Leicester, Liverpool, Newcastle, Oxford, Reading, Norwich, Cardiff, Edinburgh, and other centres throughout the country.

The subjects of examination will be English, arithmetic, and general knowledge; and those who pass the prescribed test will spend some three years in learning trades such as those of armourer, artificer, blacksmith, carpenter, electrician, fitter and wireless operator.

During their apprenticeship the boys will be maintained free of cost to their parents and guardians and, in addition, will be paid at the rate operative at the time of their enlistment.

Detailed information regarding the training scheme as a whole and application forms, which must be returned not later than 6th October, can be obtained from all Army Recruiting Offices throughout the country.

EDUCATION IN THE ARMY: 1,000 FIRST CLASS CERTIFICATES AWARDED.—The results of the examination held in April last in the Home Commands, on the Rhine, in India, and at other stations abroad—officially announced yesterday—reveal an increasing desire on the part of non-commissioned officers and men of the Regular Army to qualify for the First-Class Certificate of Education and the Special Certificate of Education.

2,617 candidates sat for the First-Class Certificate, an increase of 384 on the number who entered for the corresponding examination in 1924, and in all 1,062 certificates were awarded, 820 to those who passed in all subjects and 242 to those who took certain subjects to complete their qualification. Although the percentage of certificates awarded was somewhat lower than on the occasion of the previous examination, many of the candidates returned papers much above the average, 219 gained the mark of "distinction," while nine obtained aggregates of 80 per cent. or more and twenty aggregates of 75 per cent. or more of the maximum of marks.

In the case of the Special Certificate, which is the highest educational certificate given in the Army and is recognised by most Universities and other examining bodies in the Empire, the results were even more satisfactory. 155 candidates presented themselves as compared with 73 in April, 1924, and the subjects taken covered a wide field. They included English, French, German, Spanish, Portuguese, and Urdu in languages; ancient history, British history and modern European history; mathematics, mechanics, chemistry, physics; physiology; economics; music; drawing and the history of Art. In all 61 certificates were awarded, as compared with 25 a year ago; and 30 of the candidates obtained the mark of "distinction."

ARMY OFFICERS AND MILITARY HISTORY.—In the examination of lieutenants and captains for promotion, the campaigns and selected periods on which the military history papers will be set as from April, 1927, will be as follows:—Campaign of the British Army in Mesopotamia, 1916–17, under General Maude, from his accession to command to his death; campaign of the British Army in 1914 in France and Belgium: (1) general period, from the commencement of hostilities to the end of the Battle of the Aisne, (2) special period, from 18th August to 31st August (Battle of the Marne).

SIGNAL TRAINING CENTRE.—The Signal Training Centre (Headquarters, S.T.C. Depôt Battalion, R. Signals, Training Battalion, R. Signals, and School of Signals) has now moved from Maresfield to Catterick Camp.

REGIMENTAL ALLIANCE.—The King has been pleased to approve of Lord Strathcona's Horse (Royal Canadians), Canadian Militia, being allied to the 17th/21st Lancers.

TERRITORIAL ARMY.

PROMOTION OF OFFICERS AND N.C.O.S.—It has been decided to extend from 1st January, 1926, to 1st January, 1927, the period during which officers of the Territorial Army may be considered eligible for promotion to the rank of captain and major without qualifying at the appropriate promotion examinations laid down in the Territorial Army Regulations, 1924. Territorial Army officers will, however, be required to qualify in the courses laid down in Appendix VII., Territorial Army Regulations, unless exempted under the Regulations (as amended in 1925).

Similarly, non-commissioned officers of the Territorial Army may be considered eligible for promotion to or above the rank of sergeant without qualifying at the

courses of instruction or examinations laid down in Appendix VIA, Territorial Army Regulations, 1924.

4,000 NEW RECRUITS.—It has been officially reported that during the ten months of the present recruiting year, 33,807 men were finally approved for service in the Territorial Army, and that on the 1st instant the strength of the Army, exclusive of permanent staff, was 6,349 officers and 140,686 other ranks. To complete the peace establishment 1,438 officers and 35,210 other ranks are still required.

Recruiting in July was exceptionally good, 4,128 men having been approved for service, compared with 3,166 in the corresponding month last year. Of these, 1,055 were obtained in the Northern Command, 846 in the Southern Command and 830 in the Western Command. Among the Divisions the South Midland did best with 529, the North Midland following with 443, the West Riding with 372, and the Welsh with 336.

The total Territorial strength, exclusive of permanent staff, on 1st instant was divided as follows :—

Northern Command (3 Divisions)	33,047
Western Command (3 Divisions)	31,531
Scottish Command (2 Divisions)	23,022
Southern Command (2 Divisions)	21,505
Eastern Command (2 Divisions)	19,712
London District (2 Divisions)	18,218
Total	147,035

OFFICERS TRAINING CORPS.

ADJUTANTS TO SENIOR CONTINGENTS.—It is pointed out in an Army Council Instruction that as the number of officers of the Regular Army at present noted for employment as adjutants to contingents of the Officers' Training Corps is very small, it would appear that the fact that officers may register their names for such appointments does not appear to be widely known. Names of officers desirous of being registered for one of these appointments should be submitted through the usual channels.

MILITARY LAW.

RULES OF PROCEDURE.—The Rules of Procedure applicable to summary punishments awarded under the Army Act have been revised by an Army Order which provides that if any punishment awarded by a commanding officer, or by an authority dealing summarily with a charge under section 47 of the Army Act, appears to the Army Council or to a superior officer to be wholly illegal, the Army Council or such superior officer shall direct that the award be cancelled and the entry in the records of the accused be expunged. Similarly, if such punishment appears to be in excess of the punishment authorised by law for the offence, the Army Council or such superior officer may vary the punishment awarded so that it shall not be in excess of the punishment authorised by law, and the entry in the records of the accused shall be varied accordingly. And, similarly, if such punishment appears to be too severe having regard to all the circumstances of the case, the Army Council or such superior officer, may remit the whole or part of the punishment awarded, and such remission shall be entered in the records of the accused; provided that such power of remission

shall be exercised by a superior officer within a period of two years only from the date of award.

In this rule the expression " Superior officer " means, with respect to punishments awarded by a commanding officer, an officer not below the rank of colonel commandant who is also of superior rank to the commanding officer who awarded the punishment, and with respect to punishments awarded by an authority dealing summarily with a charge under section 47 of the Army Act, in India the Commander-in-Chief of the Forces in India, and on active service the general or air officer commanding-in-chief in the field if of superior rank or superior relative rank to the officer who awarded the punishment.

A Great Military Bibliography.

During the last fourteen years there have been added to the Library of the War Office no fewer than 25,000 books and pamphlets, a large part of which, directly or indirectly, relate to the Great War. They deal with all branches of Military Art and Science—including such modern developments as Tanks and Chemical Warfare, Military History and Geography, National and Imperial Defence, Biography, Travel, Statistics, Political Questions and kindred subjects. The principal periodicals of military interest, both British and Foreign, published during the period 1912-1925 (inclusive) have also been added to the Library.

The collection forms the largest and most complete Military Bibliography of the European War in existence. The works dealing, for example, with the Battle of the Marne, 1914, fall just short of fifty, while those dealing with the Strategy and Tactics of the War number at least a hundred.

It is believed that librarians generally, and all those interested in military questions or allied subjects, would welcome the issue of a Subject Index of books added to the War Office Library during the period in question. It is, therefore, proposed, if sufficient promises of subscriptions are received, to issue such a Catalogue, classified so as to form a guide to all military literature of recent date, English and Foreign. This catalogue or Subject Index will be prepared by Mr. F. J. Hudleston, C.B.E., the Librarian of the War Office, for publication by H.M. Stationery Office. The price will be £2 to subscribers and £3 to non-subscribers. Intending subscribers should apply for all particulars to The Controller, His Majesty's Stationery Office, Princes Street, London, S.W.1.

FOREIGN.

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CHINA.

Disturbances at Shanghai, May–June, 1925.—The disturbance in the International Settlement at Shanghai originated with a strike by Chinese workers employed in the local Japanese mills. On 30th May Chinese students, who are actively engaged in a national and anti-foreign movement in China, took this opportunity to make a demonstration on behalf of the strikers. An attempt was made to rush one of the police stations in the foreign settlement. The police fired, and, it appears, 13 Chinese were killed and 30 wounded. The result of this action was an extensive strike throughout Shanghai, accompanied by a good deal of mob violence. The Shanghai Volunteer Corps (which is international and under the command of a British colonel) was mobilised, and about 1,000 British and other

foreign sailors and marines were landed. Law and order within the settlement were maintained, though isolated conflicts are still (29th June) taking place.

OTHER OUTBREAKS.—The casualties caused by the action of the police in Shanghai gave rise to a strong anti-foreign agitation elsewhere. Outbreaks of violence against foreigners occurred in other treaty ports along the coast and up the Yangtze Valley. Where possible, the British China Squadron sent gunboats to stand-by and, if necessary, to assist in the evacuation of women and children.

HONG KONG AND CANTON.—The expected reaction in Hong Kong brought about an extensive strike and the Chinese employees left in large numbers. At Canton a local Chinese demonstration ended in firing on Shameen Island, close to Canton, which was replied to by the Europeans with the assistance of some French marines. Several Chinese were killed. All the European women and children from this island were evacuated to Hong Kong and two platoons of Indian infantry were sent from Hong Kong to safeguard property in the British and French concessions on the island.

NORTH CHINA.—There have been student demonstrations in Peking, but no serious disorder. The British battalion in North China, with headquarters at Tientsin, furnishes its quota of the Legation Guards in Peking, and also provides detachments along the Peking-Mukden Railway with the object of keeping open communication between Peking and the sea, under the terms of the Protocol of 1901 which terminated the Boxer rising.

FRANCE.

ARTILLERY SCHOOL AT POITIERS.

I. *The organisation of the School.*—1. The School is under a Colonel, assisted by a Lieutenant-Colonel.

2. Every year it receives—

(*a*) About 50 N.C.Os. of the regular army, who go through an 11-months' training in view of their promotion to the rank of sub-lieutenant in the regular army. In this capacity they next proceed to Fontainebleau for a 12 months' course.

(*b*) Approximately 1,000 young men (N.C.O. probationer officers for the reserve) in two series of six months each.

A staff of field officers and subaltern officers ensures the functioning of the instructive and administrative services.

3. *Instruction* is given by—

(*a*) Instructors in—

Artillery,
Infantry,
The employment of arms,
Geography and history,
Topography,
Applied sciences (intercommunications, signals),
Motor driving,
Modern languages,

who are responsible for the training of the cadets with regard to general instruction.

(*b*) By instructors responsible for military training.

Each instructor (junior captain or lieutenant) commands a squad of about 25 pupils, which in principle remains under his orders during the whole series.

These squads are assembled in groups of six as a rule, under the orders of a major or a senior captain. These group commanders have at their disposal two deputy instructors who assist them as observation officer and wireless officer. In this capacity and under the direction of the instructors they are responsible for practical exercises in topography and signalling.

Further—

One field officer and three subaltern infantry officers teach infantry regulations and direct practical exercises in the field.

One field officer and six captains or lieutenants who have been through the Cavalry School give theoretical and practical instruction in horse mastership and riding.

One subaltern officer assisted by N.C.O. instructors who have, in so far as possible, been through an instructional course at the Army Physical Training School, give theoretical and practical instruction in physical training.

4. *Administrative Services.*—The administrative services are constituted as in a regiment, by—

1 major	Responsible for the administration.
1 paymaster	
1 storekeeper	
1 director of ordnance stores	Responsible for the transport of material and material for manœuvres.
1 regimental sergeant-major	Responsible for discipline.
3 medical officers.	
2 veterinary surgeons.	

The subordinate ***personnel*** (168 men, 370 horses),
One transport company (220 men, 2 officers' chargers),
One artillery battery (260 men, 150 horses)
group and administer respectively as follows :—

The subordinate ***personnel***—
Employees for general service.
Officers' and cadets' servants.
Service chargers of officers of the ***cadre*** and the riding school horses.

The transport company—
Grooms.
Chauffeurs.

The artillery battery—
personnel for manœuvres and target practice.
Horses for manœuvres.

II. *Categories of Students and Conditions of Admission to the School of Artillery.*—The School of Artillery trains :—

1. *Officers of the Regular Army.*

They are recruited from the N.C.Os. of the regular army who have had at least two years' service as N.C.Os. on the 1st of January of the year of the competitive examination or who will have held the rank for two years on the 15th

October of the year of the competitive examination, and at least three months' service in a fighting unit before the Armistice.

At the competitive examination they are examined in the programme given in the " Instruction pour l'admission dans les Ecoles de sous-officiers élèves officiers."

They spend eleven months at the school and if, at the close of the course, they secure a sufficient average they are promoted to the rank of second-lieutenant in the regular army. In this capacity they then proceed to follow a one-year artillery course at Fontainebleau.

2. *Officers of the Reserve.*

They are recruited according to the conditions given in " Les élèves Officiers de Réserve"

(*a*) from amongst young men who have obtained the higher certificate for military training (Brévet de Préparation Militaire Supérieure) and who are provided with certain civil diplomas establishing their degree of general knowledge. These are admitted to the school without first passing through a regiment.

(*b*) from amongst young men normally incorporated in regiments and who, after having been through a N.C.O.s' special promotion squad, undergo at the competitive examination a probationary test in general knowledge and in the indispensable military subjects.

Both categories remain at the school for 6 months.

Those that pass the final examination are promoted, according to orders for each series issued by the Minister for War—either to the rank of second lieutenant of the reserve or to that of quartermaster-sergeant, and then carry out 6 months' service in a regiment with the rank they have obtained.

Candidates who do not pass the final examination are sent to a regiment with the rank they held on entering the school and do 1 year's service if they have the " Brévet de Préparation Militaire Supérieure," and 6 months if they came from a unit.

3. If necessary, an artillery course, a course for topographical officers or a course for wireless officers can be organised at the school.

Lieutenants appointed by the Minister on the recommendation of their C.O. are sent to these courses.

ITALY.

Colonial Activity in Tripolitania.

1. *History.*—In order to appreciate the Italian administration in Tripolitania at its proper value, it is necessary to bear in mind the main facts of the history of this part of Africa during the last 15 years. On the outbreak of the Turco-Italian war in 1911, Libya, comprising the two provinces of Tripolitania and Cyrenaica, formed part of the Turkish Empire. The Italian campaign aimed at the conquest of Libya, which on the conclusion of peace in 1913 became an Italian colony. The inhabitants did not welcome their new masters, and the country was still in a very unsettled state when Italy entered the Great War in

1915. The Arabs did not fail to exploit to the full the opportunity given to them by the fact of Italian attention being centred on the campaign in Europe, and from 1915 onwards practically nothing but the coast towns remained in Italian occupation.

From the conclusion of the Great War down to the present time Italy has been engaged in the task of re-occupying and pacifying the country, until now, as far as Tripolitania is concerned, an area of country some 400 miles long and 200 miles wide at its greatest width, and stretching from Sirte on the coast to Ghadames on the Tunisian frontier, has been re-occupied. There can be little doubt that the chief credit for this achievement belongs to Count Volpi, who, until July, 1925, was Governor of the colony.

2. *System of Government.*—Both the civilian administration and the supreme military command are vested in the governor, who is assisted by a deputy governor and by a general officer commanding, with a military staff. The colony is divided into three zones—the Western, Eastern and Southern. The form of government is partly military and partly civil, areas passing from the former to the latter as they become pacified. The whole of the Western zone is now under civil control, while the other two, with the exception of one district in the Eastern zone, remain under the military.

3. *Garrison.*—The garrison of Tripolitania consists of the following, in addition to headquarter staffs :—

	Total strength.
(*a*) A division of carabinieri, who perform all the police work of the colony	1,365
(*b*) Two battalions of "Cacciatori." These are regular Italian troops made up as far as possible of volunteers. At present, however, it is necessary to make up 60 per cent. of their strength with conscripts. The word "Cacciatori" is the same as the French chasseur	1,542
(*c*) One armoured car squadron (12 cars)	56
One tank company (7 tanks)	61
(*d*) Three companies of engineers (including signals)	877
(*e*) Five Libyan battalions, recruited locally	3,880
(*f*) Six Eritrean battalions, specially enlisted in Eritrea for service in Tripolitania. It is proposed to add a seventh battalion shortly, when total strength will be	5,765
(*g*) Seven squadrons of "Savari" or cavalry. The word "Savari" being of the same origin as the Urdu word "Sowar"	966
(*h*) Three "Saharan groups," each consisting of headquarters, a camel platoon, a mounted infantry platoon also on camels, an infantry platoon with machine gun section on camels, a section of pack artillery on camels	970
(*i*) One squadron of "Spahis," chiefly employed on guarding caravan routes and the prevention of contraband trading on the Tunisian frontier	233
(*j*) Three pack batteries, each armed with four 65-mm. guns	666
(*k*) Four companies of garrison artillery	667
(*l*) A suitable proportion of administrative units and services.	

The grand total is made up as follows:—

Italians—Officers	... ...	556
	Civilians in military employ	114
	Under officers	608
	Other ranks	3,961
Natives—Libyans	... ...	8,258
	Eritreans	5,620
	Total	19,117

Of the above total only 1,779 are officially regarded as belonging to non-combatant bodies.

The garrison is further supplemented by the following, which are not included in the recognised establishments:—

		Total strength.
One cohort of National militia (Fascisti)		750
Native irregulars	The Kerbish group	1,000
	Irregular bands	1,800
	Local guards	900
		4,450

making in all a total of 23,567 all ranks, exclusive of reservists and Air Force. The latter maintain 83 aeroplanes and necessary depôts and repair shops in the colony.

4. *System of Military Control.*—It is recognised that, under the conditions prevailing in Tripolitania, mobility must be the keynote of military operations and that, in order to ensure mobility, the first essential is to reduce transport and supply columns to the utmost extent.

Apart from the coastal towns, which are organised as entrenched camps and can always meet any requirements, the Italians have therefore established throughout the country fortified depôts, whence troops can at all times draw supplies at the shortest possible notice. The depôts are dotted along the main routes and are generally not more than two or three marches apart. At present there are about 20 of them, the most important being at Gadames, Nalut, Giado, Jefren, Gharian, Mizda, Tarhuna, Gusbat, Beni Ulid, Bir Dufan (midway between Beni Ulid and Misurata), Bir El Ghebabbia (47 miles south of Tauorga), Buerat El Hsun (on the coast) and Gazr Bu Hadi (about 12 miles south of Sirte).

The depôts are protected by detachments of Italian and native troops. The former generally provide the actual garrisons, whilst the latter furnish the first reserves and the reliefs for mobile forces. This practice of employing natives rather than Italians for active operations appears to have taken firm root. The natives are more accustomed to hardships, they are better marchers, and it is said that, under Italian officers, they can be relied on to fight well without any stiffening from Italian troops.

Besides the fortified depôts, mobility is facilitated by—

(i) A network of motor roads that is rapidly extending in all directions over the whole colony;

(ii) An ever-increasing number of emergency landing grounds and of aerodromes provided with hangars;
(iii) The sinking of new wells along all routes likely to be used for military purposes.

Intercommunication is ensured by telegraph and telephone lines, wireless stations, a pigeon post, and orderlies mounted on motor-bicycles, horses or camels. For the guidance of troops and aircraft, and for keeping stretches of country under observation by night, some fortified posts (Beni Ulid, for instance) are provided with powerful searchlights.

Based upon the depôts described above, and always ready to move quickly along any of the lines of communication between them, are the mobile troops, which may be divided into the following five categories:—

(i) *Principal mobile columns* on the main line of observation which runs, broadly speaking, from Gadames to Sirte. The strength of each column varies according to circumstances, but is usually 3 or 4 Libyan or Eritrean battalions, 1 or 2 squadrons of cavalry, 1 pack battery, a small supply column and a field wireless section. In April, 1925, there were two such columns: one in the Eastern Zone, known as the Gruppo mobile dello Zemzem, after the wadi of that name, the other in the Southern Zone, called the Gruppo mobile del Soffegin, after another wadi.
(ii) *Secondary mobile columns* north of the main line of observation. These columns now number 4; they generally consist of not less than a company of infantry with a troop of cavalry. They operate behind and in the gap or gaps between the principal columns.
(iii) *The three Saharian groups*, which patrol out in front of the main line of observation.
(iv) *The Kerbish group and the Irregular bands*, which serve to supplement the action of the mobile columns and Saharian groups.
(v) *The Local Guards*, for the protection of crops, cattle and other property.

In addition there are, of course, the "lieutenancies," "sections" and stations of the carabinieri spread all over the country from the sea to a line running roughly from Nalut through Beni Ulid to Tauorga.

Thus almost the entire colony is covered with what the Italians call a "moving net" whose human meshes have "perpetual motion" as their motto.

Incessant observation, by ground and air reconnaissance, makes it almost impossible for rebel bodies to assemble unseen; if they do assemble and manage to penetrate, they find it impossible to get out again.

The utmost importance is attached to the collection and rapid transmission of military intelligence. Most of the information required is obtained by the troops themselves, but the efforts of the troops are supplemented by a secret service. Details regarding this organisation are naturally not obtainable, but it appears to consist of a relatively small number of reliable native agents. They may be either "travellers" or "sitters" and are kept in permanent employ.

The Italians declare that the "moving net" system described above has proved to be efficient and also economical in the matter of men. They claim to have effected the re-conquest of the colony (since 1922) *with a field force of native troops* averaging no more than 12 battalions, 10 squadrons and 3 pack batteries.

The methods of warfare adopted by the hostile tribesmen do not differ in any material respect from those which similar foes have employed against British

troops for generations. It is noteworthy, however, that in Tripolitania the number of tribesmen taking part in any given combat is always greater than the number of rifles they carry. The explanation is that, since the tribes never have enough firearms for everyone, unarmed men accompany the armed men from the outset so as to be ready to take up the arms of the fallen immediately.

The tactical formation favoured by the Italians when fighting is likely corresponds most nearly to what we should call "artillery formation." They claim that this gives them the greatest freedom of manœuvre to meet unexpected attacks from any direction, and that it is by far the easiest to control. As a rule, the banner of the commander (carried in the centre and well forward) can be clearly seen; it serves as a beacon to all concerned, and these regulate their movements as required. When messages have to be sent they are carried by mounted orderlies. Visual signalling, wireless or other mechanical means are not used either on the march or in action.

5. *Relations with natives.*—The relations between the Italians and the natives are difficult for the British to understand; to our ideas they range widely between the two extremes of excessive severity on the one hand and undue familiarity on the other.

When fighting is in progress, quarter is neither asked for nor given, and even women and children have been known to suffer badly. It must be remembered, however, that troops received the strongest provocation in that many of their comrades who fell into the hands of the Arabs were first mutilated and then tortured to death with indescribable brutality. When all is peace, severity is exemplified by the heavy sentences which civil commissioners and deputy commissioners may and do inflict for relatively trivial offences. One deputy commissioner remarked that he had no law-court in his district, that he himself was judge and jury combined, and that he had frequently had men hanged without any previous reference to higher authority; he merely reported such occurrences afterwards. Respect for officers and officials is strictly enforced; except in the crowded streets of Tripoli no native will venture to pass a "Sahib" without saluting him. The relations between hostile tribes and tribes which have made submission are carefully watched. It was stated that, if any individual of the former were found in a camp or village belonging to the latter, the offending individual was at once shot and that his hosts, with all their kith and kin, were immediately expelled from the colony.

Inside the towns municipal taxes are levied on natives. Outside the towns tribes are taxed according to local political conditions and according to their ability to pay. The very rich Nuuahi-el-Arbaa tribe (just south of Tripoli), for instance, are charged 500,000 lire a year plus 10 per cent. of their harvest, although they number only about 7,000 souls. Other less pacified and poorer tribes are taxed less heavily.

At the opposite pole to severity stands unreserved familiarity which, except in the relation between officers and soldiers, forms the key-note of daily intercourse between Italians and natives. "Colour" appears to be no bar to intimacy; and, although the governing authorities did put their foot down when some of their own race began to set up as bootblacks in the streets of Tripoli, it is not an uncommon sight to see Italian labourers working side by side with Arab coolies. Again, the Italian officer treats the Sheikhs with what British opinion would deem to be altogether excessive friendliness and equality—and the example is set him by the highest in the land. When His Excellency the Governor returned to Tripoli after a recent visit to Italy, he was welcomed with all due ceremony

by the local magnates. These included the last survivor of an ancient Arab family, an aged dignitary whom he affectionately kissed upon both cheeks.

The effect of all this upon the prestige of the European is difficult to determine. Outwardly the relations between conquerors and conquered are good, but the Italians, apparently without incurring resentment, take astonishing liberties with what we should regard as the most sacred prejudices of Mahomedanism. Near Zliten, for example, the mosque and tomb of Abdul-es-Salam are held by Mahomedans in extreme veneration, and the entry to the tomb is severely restricted even amongst the ranks of the Faithful. Yet Italian officials walk in and out, and conduct visitors up to the tomb itself, without removing their shoes or in any way considering the religious susceptibilities of the Arab. Compared with the punctilious observances by the British in Egypt and in India with regard to such points, this attitude seems dangerous, but no trace of resentment is apparent—on the surface. It is to be remembered, however, that on the one hand the Mahomedans have seen many recent examples of Italian procedure with "rebels," and on the other hand that Italy has not a huge Mahomedan population within her domains, like the British Empire. It also appears to be a fact that the inhabitants of Tripolitania are not as fanatical as their co-religionists in Cyrenaica.

From what has been said above, it might be supposed that the Italians take no heed of native susceptibilities, but this is by no means the case. They do a good deal for the natives, and they make honest attempts to understand and to humour them. The fine old mosque at Tagiura, for example, is being repaired by the Colonial Government at considerable expense. In the mosque of Abdul-el-Salam, near Zliten, are large glass candelabra presented by Count Volpi. Some of the attempts to humour the natives are as amusing as they are ingenious and successful. Near Gusbat there are 91,000 fine old olive trees. The deputy commissioner on the spot decided to have some more at the smallest possible cost, so he made a friendly agreement with the local husbands that for every son born the father should plant three young trees in honour of the event. The consequence has been an addition of 2,000 trees in the last 3 years. The natives quite see the joke, and everyone is happy. Again, whilst touring in the colony, it was noticed that all signposts (good solid structures of wood and iron), besides giving the names of, and distances to, other localities, also invariably showed the distance to Mecca, followed by several lines of writing in local Arabic; and, as these distances to Mecca always ran to more than 4,000 kilometres, it was not quite obvious what useful purpose they served by being displayed all over the country. When General Graziani, Commandant of the Southern Zone, was asked he replied that, since wood and iron were scarce in Tripolitania, the signposts stood in danger of being "pinched." The distances to Mecca, followed by a suitable quotation from the first Sura of the Koran, had therefore been marked on all signposts so as to induce the natives to treat them with proper respect! The results had been entirely satisfactory.

Opinions vary on the question of possible loss of prestige incurred by the employment of Italians on menial tasks, but on the whole they incline to the acceptance of the idea that prestige does suffer. It appears, however, that the Arab, with some justification, regards the Sicilian as being part Oriental, and therefore that Sicilian labour can be employed alongside Arab labour without loss of prestige to the pure Italian.

In the Tripolitania, as elsewhere, the Arab appreciates first strength and next justice and a consistent policy. The administration of Count Volpi has been strong in the sense that it has put down opposition with great severity. Whether

the Arab feels that the other two attributes are forthcoming cannot be said. He naturally does not particularly appreciate the (to him) questionable advantages of Occidental civilisation, even when they are conferred upon him for nothing. When he has to pay (and sometimes pay heavily) for the unwanted benefits, he will appreciate them even less. It is, therefore, not illogical to assume that he only awaits a relaxation of the strength to rise again against his conquerors.

The characteristic attitude of the Italian towards women, as well as his disregard for the sanctity of " holy places " and his lack of dignity in comporting himself toward the native, may be carried off by a sufficiently obvious display of armed force; but it is an open question whether the Italian has acquired a true appreciation of the capability of the Oriental for secretly nursing a sense of injury —for biding his time and then suddenly seizing an opportunity to rid himself of a yoke that must gall his racial, religious and financial susceptibilities. The views of the Italians on their relations with the natives can be best summed up in these words of Count Volpi himself: " We naturally cannot expect the Arabs to love us. The best we can hope for is that they do not hate us—and I do not think they do."

Be that as it may: it is unprofitable to theorise too far, and in fairness to the Italians it must be stated that the visible results of their administration are good, that the native population appears perfectly friendly without being subservient, and goes about its affairs in a contented and prosperous manner.

It has been wisely said that " The Orient begins at the Alps." Bearing this adage in mind it may be possible to arrive at a clearer and more sympathetic understanding of Italians in Tripolitania than by drawing an exact comparison with the measures likely to be effected by a British administration in similar circumstances.

6. *Object of Italian Occupation.*—In conclusion, a word may be said as to the reason why Italy is in occupation of this part of Africa—an occupation which is now, and must continue to be for some considerable time, entirely without economic justification. The colony is, and always has been, very far from paying any sort of dividend.

Italy has always considered that her geographical position gives her an *a priori* right to be regarded as the principal Power in the Mediterranean. Her lack of raw materials, and consequent dependence on overseas trade, has still further emphasised the fact that her very existence depends on the trade routes of the Mediterranean. In the nineteenth century she saw other Mediterranean Powers establishing themselves on the northern coast of Africa: Spain in Morocco, France in Algiers and Tunis, Great Britain in Egypt. She felt the necessity of strengthening her strategic position by gaining a foothold on the only portion of the Southern Mediterranean shores left available for the purpose.

Secondly, she has a very real need of suitable outlets for her surplus population. The inhabitants of Italy increase at the rate of 300,000 a year, and there is not room for them at home. Their emigration to foreign countries is restricted in many parts of the world by local lagislation, as, for example, the United States emigration law, which has reduced Italy's annual quota for admission to the States from 40,000 to less than 4,000. In view of the fact that it is estimated that not more than 300,000 Italians can be successfully absorbed by the North African Colonies, the latter cannot be regarded as of much assistance towards the solution of the population problem. but at present they represent the only available outlet to which Italians can go and still reside beneath the shade of their national flag.

TURKEY.

POLITICAL.

The Turkish Government appear to have been chiefly concerned with the final suppression of the Kurdish revolt, and with the trial of those concerned with alleged plots against the Republic. The Special Tribunals of Independence set up at the outset of the revolt, the one in Kurdistan and the other at Angora, have been busy trying and sentencing those who have shown disaffection against the Republic and even criticism against the Government. They are disarming the Kurdish tribes, and probably on account of their ruthless methods, there are indications that in places the revolt still smoulders. It is reported that the Government intend to introduce administrative reforms in Kurdistan which will take power from the Kurdish Chiefs.

ECONOMIC AND COMMERCIAL.

Summary of the Report on the Economic and Commercial Conditions in Turkey, by the Commercial Secretary, Constantinople, for the period March, 1924, to March, 1925.

The Protectionist policy adopted in 1923 when the new *régime* in Turkey acquired complete independence, has been somewhat modified, though the spirit of " Turkey for the Turks " still remains prevalent. There is no doubt that the new *régime* has systematically held to its original policy as regards the development of the country's resources. Progress, though very slow, has certainly been made, especially in railway construction and the development of agriculture. In spite of this, it will be a long time before they realise their aspirations unless they abandon their present idea of carrying out their programme by means of their own limited financial resources. The Budget cannot be balanced and owing to military requirements, it is feared that Government departments may have to curtail expenditure set aside for public works for the current year. There have been signs of late that the Government are gradually realising the enormous task of reconstruction and development which they have set themselves, and that, without foreign financial assistance, many years must go by before the Anatolian peasants and the Government itself will derive any benefit from the laudable programme which has been undertaken. Although confidence in the West may be gradually growing, the Government has yet to show by convincing acts that those interested in her welfare can render financial assistance under reasonable conditions of security.

The Customs Administration.—There have been fewer complaints with regard to Customs control of vessels, and the Director-General is considering a scheme for a revision of the Customs regulations.

Agriculture.—As the result of the transformation of the Agricultural Department into an independent ministry, agricultural zones have been formed, as in the case of the commercial zones created by the Ministry of Commerce. Early in the year it was decided to reorganise the Agricultural Banks, which is to remain under the control of the State. Both the Ministry of Agriculture and the Agricultural Bank have done a great deal towards the development of agriculture, the latter having advanced £T15,000,000 to the peasants for the purchase of seed, agricultural machinery and implements, as well as live stock. The Ministry of Agriculture has, on the other hand, distributed seed and agricultural machinery gratuitously to necessitous peasants.

The Government agriculture programme consists in the establishment of agricultural schools, where free instruction in the use of modern agricultural machinery can be given.

With a wide range of agricultural production, Turkey should, by the sale of her crops abroad, increase the exchange value of Turkish money.

There has been a marked improvement in the production of cotton.

Shipping in Constantinople.—Although there has been some improvement in port conditions in regard to towage and pilotage, no serious effort has been made to co-ordinate Turkish administrative methods of controlling shipping, and port services have continued to be reserved for Turkish subjects only.

Cost of Living.—The cost of living for articles of primary necessity, such as foodstuffs and fuel, increased month by month throughout the year. Increased taxation and the imposition of octroi dues are mainly responsible. In spite of this, there has been no systematic adjustment of wages to meet the increased cost of living. The Government has given little encouragement to workmen's associations, and there have been no indications of unrest among the workmen employed in essential services.

Trade Conditions.—The slow progress of agricultural recovery, due largely to the upheaval caused by the exchange of populations, has continued the state of poverty of the peasant and consequently has reduced his capacity as a purchaser of manufactures.

Other factors which have mitigated against commerce during the year have been :—

(i) The instability of the Turkish pound throughout the year.
(ii) The uncertainty as to the interpretation of the Treaty provisions in regard to exchangeable Greeks.
(iii) Uncertainty as to new taxation.
(iv) The decline of the transit trade of Constantinople due to high port dues, etc.
(v) The general shortage of ready capital and the lack of credit facilities granted by the banks.

The general effect on trade of the foregoing considerations has been to oblige traders to abstain from forward operations. Stocks have been reduced and have only been withdrawn from the Customs to fulfil immediate demands. Firms in general have successfully weathered the storm, although a large number are carrying on with reduced staffs; failures have been comparatively small

Imports.		Exports.	
1923.	1924.	1923.	1924.
January–July.	January–July.	January–July.	January–July.
£T63 million.	£T84 million.	£T31 million.	£T56 million.

AIR NOTES.

ROYAL AIR FORCE.

Appointments and Retirements.

Appointments.—Air Vice-Marshal H. R. M. Brooke-Popham, C.B., C.M.G., D.S.O., A.F.C., has been appointed Air Officer Commanding Fighting Area to date 1st April, 1926.

Air Vice-Marshal J. M. Steel, C.B., C.M.G., C.B.E., has been appointed Air Officer Commanding Bombing Area to date 1st May, 1926.

Retirement.—Air Vice-Marshal Sir Vyell Vyvyan, K.C.B., D.S.O., was placed on the retired list with effect from the 1st September, 1925.

Organisation, Development and Training.

R.A.F. Staff College.—During the Summer vacation, students attending the fourth course at the R.A.F. Staff College were attached for periods of seven to ten days to the Navy and Army; several students have also visited foreign countries.

All students were employed on the various staffs in connection with the recent Army manœuvres.

Flying Training.—During the period from the 8th June, 1925, to the 8th September, 1925, the following have completed courses of instruction in *ab initio* flying:—

Naval Officers	25
R.A.F. Officers	70
Airmen	26
Flight Cadets	23

In addition to these, several officers and airmen were given Instructor, Refresher and Conversion Courses.

To increase the flying training capacity of the Royal Air Force, the Central Flying School was re-organised during this month to include a course of *ab initio* pupils. In addition to its normal function of training flying instructors, two courses of *ab initio* pupils will be trained. The pupil-instructors' course will be reduced to 15 instead of 30 pupil-instructors.

Merchant Service Officers and Short Service Commissions.—An agreement has been concluded with the Mercantile Marine Department of the Board of Trade whereby officers, apprentices and seamen in the Merchant Service holding short service commissions in the Royal Air Force, may be allowed to count a part of their Royal Air Force service towards the period of sea service required to qualify them for Board of Trade Certificates.

Eligibility of Clerks for Employment as Airmen Pilots.—It has been decided that clerks shall in future be eligible for selection as airmen pilots and a new trade of pilot has accordingly been introduced in Group IV., with pay at rates identical with those of pilot Group III.

ENTRY OF BOY CLERKS INTO THE ROYAL AIR FORCE.—Arrangements have been concluded with the Civil Service Commissioners for the examination of candidates for entry as Boy Clerks into the Royal Air Force by open competition. The examination will take place on the 16th October, and thirty vacancies will be offered. Successful candidates will join Ruislip in January, 1926. A further fifteen vacancies will be filled by direct entry by the Officer in charge Records, Ruislip, and selected candidates will join in October.

DECENTRALISED SYSTEM OF DISCHARGES.—It has been decided to decentralise the present system of effecting discharges and transfers to the reserve from the Royal Air Force Depôt, and certain specified units have been authorised to carry out the new procedure with effect from the 1st October, 1925.

NAVAL CO-OPERATION.

(*See also "Fleet-Air Arm," Navy Notes, p.* 784.)

FLEET AIR ARM.—During the quarter, the usual routine work and exercises have taken place from the Fleet Air Arm; flights embarked in H.M. carriers "Eagle" and "Argus."

COASTAL AREA.—The Coastal Reconnaissance flight at Calshot (No. 481), took part in Atlantic Fleet exercises in the beginning of July, operating from Portland. Between the 3rd and 23rd September, this flight carried out a cruise in Irish waters.

The flight has recently been re-equipped with new twin-engined flying boats of the "Southampton" type, and the cruise was intended to demonstrate the facility with which modern flying boats can work away from their own base under any weather conditions; the flying boats operated in conjunction with H.M. cruiser "Calliope" and two of H.M. destroyers. The composition of the flight was four "Southampton" flying boats and their itinerary was as follows:—

Calshot to Portland, and thence to Cattewater; Cattewater to Pembroke, where the flying boats secured to moorings and refuelled from the destroyers. Pembroke to Carrickfergus; *en route* an exercise was carried out with H.M. Ships. One flying boat was forced to land near Wicklow Head, owing to slight engine trouble, and was taken in tow by H.M.S. "Calliope," arriving safely at Carrickfergus the following day. The flying boats then proceeded to Campbeltown, where exercises were continued with H.M. Ships, having left the damaged one behind at Belfast for repairs.

Throughout this period bad weather was experienced, the wind at times reaching gale force, with rain and low clouds. Visibility at times was reduced to 200 yards, with clouds as low as 100 feet. During a gale on 15th September, three flying boats landed safely at Campbeltown on completion of an exercise and refuelled from H.M.S. "Calliope" without any difficulty while the gale was still at its height. All flying boats handled well on the water and rode well at their moorings.

From 16th to 22nd September, demonstration flights were carried out over such places as Ardrossan, Ayr, Oban, Greenock, Gourock, Glasgow and Belfast, also over other towns in the Belfast Lough.

The Flight parted company with the Naval forces at Campbeltown on 21st September, calling at Belfast, where they remained a day to meet the Air Officer Commanding, Coastal Area, and the Air Officer Commanding, Special Reserve and Auxiliary Air Force.

The flight left for Calshot on 23rd September, two boats making a non-stop flight, a distance of 510 miles in 5¾ hours; the remaining two flying boats visited ports *en route*.

FLYING BOATS IN HEAVY WEATHER.—Air Vice-Marshal F. R. Scarlett, C.B., D.S.O., Commanding Coastal Area, R.A.F. and Air Commodore C. L. N. Newall, C.M.G., C.B.E., A.M., Commanding Special Reserve and Auxiliary Air Force, left for Cattewater *en route* for Ireland on 19th September, in a fifth "Southampton" flying boat, belonging to the R.A.F. establishment at Felixstowe; a crew of four was carried, making a total of six people, with baggage, and a start was made in a strong head wind and heavy rain squalls. The journey was accomplished in 2½ hours.

On 21st, the flying boat left in a westerly gale and rain, for Ireland. Off Lundy, really bad weather was experienced and hardly any headway was made for about 20 minutes. Carrickfergus (Belfast Lough) was, however, safely reached, a distance of 370 miles having been covered in 5¼ hours.

At Belfast the A.O.C. met the remainder of the flight, and on 22nd a demonstration formation flight was made by four of the flying boats. It was raining and blowing hard, and the visibility was less than a mile owing to the mist.

On 22nd, the Air Vice-Marshal's boat, with the same passengers and crew, left for Cromarty against a strong northerly wind and rain. The weather was so bad that they were forced to land at Oban, the clouds being too low to allow of a crossing being made *viâ* the Caledonian Canal, which is flanked by high hills. Cromarty was, however, safely reached on the following day, where the A.O.C. Coastal Area visited the Commander-in-Chief, Atlantic Fleet. On 25th, the flying boat left for the Firth of Forth, so that the A.O.C. could inspect some of the Scottish units of the Coastal Area Command. Felixstowe was also reached safely at 8 p.m. the same evening, the pilot landing in the dark under difficult circumstances.

The cruise generally has shown that, under conditions of weather which must throughout be considered distinctly bad, these flying boats are capable of keeping the air and carrying out such observations as visibility will permit. It also demonstrates that a programme once having been drawn up, can be adhered to practically independently of the weather. Refuelling was carried out on all occasions without a hitch, and, provided a certain amount of shelter is available when the flying boats are not flying, it has been demonstrated that they can function successfully quite separately and independently of their bases.

TEST FLIGHT.—In July, the Development Flight, Felixstowe, proceeded on a cruise to the Scilly Isles to test out certain designs of flying boats under Service conditions.

THE MALTA COMMAND.—No. 481 Coastal Reconnaissance Flight at Malta have been engaged on co-operation duties with Naval and Military units based at that port. During the period 6th to 20th July a flight was made by five aircraft of this Flight to various ports in Italy, in order to exercise the *personnel* in long distance flying, navigation, and generally to give experience in operating from distant bases away from normal sources of supplies.

ARMY CO-OPERATION.

DIVISIONAL TRAINING.—Divisions started training in the manœuvre area at the beginning of September. In order that squadrons might be in a central position as regards the area allotted to the Division to which each was allocated for training purposes, a number of moves became necessary. The concentration

of the 1st Division in the Petersfield-Alton area necessitated the move of No. 13 (A.C.) Squadron to a temporary landing ground at Soberton. Odiham was quite convenient for the 2nd Division who were training in the Basingstoke area and so No. 4 (A.C.) Squadron was moved to the temporary aerodrome at that place. The training of the 3rd Division and the 162nd Territorial Infantry Brigade was carried out on Salisbury Plain so that No. 16 (A.C.) Squadron was able to co-operate with them from Old Sarum, while the same aerodrome proved suitable for the special flight formed from the School of Army Co-operation to work with the Cavalry Division whose training area lay to the north-west. The 4th Division was concentrated in the Sutton Scotney-Worthy Down area, so that the aerodrome at the latter was very convenient for No. 2 Squadron. This squadron during the greater part of the summer was split up into detachments in order to meet the requirements of the Eastern Command. No. 3 (Fighter) Squadron from Upavon was used on several occasions during exercises on the 3rd and 4th Divisions to represent low flying attack and gave the troops a good deal of practice in the measures required to guard against this form of attack.

ATTACHED MILITARY OFFICERS.—Officers were attached by the War Office to each Army Co-operation Squadron during the whole period of Divisional training and Army manœuvres to perform the duties of Branch Intelligence Officer and Squadron Artillery Officer. These appointments play an important part in the collation and dissemination of information obtained from the air, and since the war little opportunity had previously been afforded of studying their functions.

ARMY MANŒUVRES.—For Army Manœuvres, No. 25 (Fighter) Squadron moved to Odiham and No. 207 (Bombing) Squadron moved to Farnborough to co-operate with the Mercian Forces, while No. 56 (Fighter) Squadron and No. 39 (Bombing) Squadron were accommodated at the disused aerodromes at Boscombe Down and Stonehenge.

During the period when Army manœuvres were taking place and immediately prior to their start the location of squadrons was decided by the respective commanders of the two forces and a number of moves took place. The open *terrain* in which the Wessex force was operating made it comparatively easy to find advanced landing grounds near the headquarters of army formations and this advantage was very fully utilised.

The weather on 22nd September, the first day of manœuvres, was very bad for air reconnaissance, but throughout the three days the information obtained from the air was very complete and accurate.

In addition to the Royal Air Force officers appointed to the Directing Staff, the Chief of the Air Staff, with a number of his Staff Officers, attended Army Manœuvres, and much valuable information and experience of the work of the Royal Air Force in co-operation with the Army was obtained.

AUXILIARY AIR FORCE.

FORMATIONS AND RECRUITING.—The four Squadrons forming immediately are No. 600 City of London (Bombing) Squadron, No. 601 County of London (Bombing) Squadron, No. 602 City of Glasgow (Bombing) Squadron, and No. 603 City of Edinburgh (Bombing) Squadron. Applications for commissions are now invited for these Squadrons to which Commanding Officers have (with the exception of No. 600 Squadron) already been appointed. The recruiting of airmen will be opened shortly.

OVERSEAS COMMANDS.

IRAQ.

GENERAL.—The situation in Iraq has remained settled, except in the Sulaimaniyah area, where minor operations have been carried out against Shaikh Mahmoud. July saw the formation of several robber bands which made several raids on caravans and friendly villages in the Sulaimaniyah area. Punitive air action was taken, after due warning, against various villages in the disaffected districts. This served to hold Mahmoud's activities in check for a time, but during August he increased his following and sphere of influence and several discontented chiefs joined his party. These new supporters were ordered to surrender to Government, but as the summonses were ignored, air action was taken, after due warning, against their villages. During the month a column of ground troops with air co-operation demonstrated in the disaffected areas with good effect. Independent air action was also taken against Chingina, a village which had long been harbouring outlaws, resisting the Government authorities and storing Mahmoud's food supplies. Waldana, another of Mahmoud's bases, was attacked and burnt by ground troops on 27th August. During this month proclamations were dropped on the Jaj tribes passing into Iraq on their annual migration, ordering them to be of good behaviour during their stay in the country. These had a good effect and Mahmoud's endeavours to collect revenue from them were not productive of much result.

NORTHERN IRAQ.—Jamil Beg Agha, the leader of the Sindi Kurds, who, as mentioned in last quarter's notes, fled the country to escape punishment, returned to Iraq during July, and at once commenced to stir up trouble. He collected a force of hostile tribesmen and made two attacks on posts near the northern frontier. He then fled the country again. He is reported to have returned again at the beginning of August, but, so far, he has shown no signs of further activity.

ARMOURED CARS.—Training has progressed on normal lines. The armoured car companies have carried out various reconnaissances and No. 5 Company made a demonstration tour in the Erbil district during June. When the rioting occurred at Mohammerah in July, three cars of No. 4 Company were sent to the frontier to safeguard British interests, but it was not found necessary for them to take any action.

TURCO-IRAQ FRONTIER.—During September the Council of the League of Nations considered the question of the Turco-Iraq Frontier. Unfortunately no decision was reached and the Session closed after referring certain doubtful questions of procedure to the Permanent Count of International Justice. The decision of the Court is expected towards the end of November and the Council of the League will probably consider the questions again in December, when it is hoped that they will give a decision.

In the meantime the League of Nations expects both parties to maintain the *status quo* accepted by them at Brussels in October, 1924. Owing to allegations that the Turks have violated the *status quo* by deporting Christians from immediately north of the Brussels or *status quo* frontier, the Council of the League have appointed a small Commission to proceed to the area without delay to investigate. The chief representative on the Commission will be General Laidoner, the Estonian Commander-in-Chief.

SELECTION OF BRITISH OFFICERS FOR THE IRAQ ARMY.—In consequence of the decision to re-organise the Iraq Army and to appoint a number of British officers in an executive capacity the Air Ministry agreed to assist the Colonial

Office by undertaking the selection of candidates. Selections have now been made for nearly all posts, the majority of candidates accepted being regular officers of the British Army.

ADEN.

During June, the Zeidis, who are under the rule of the Imam of Yeman, invaded the north-eastern portion of the Protectorate. Various reconnaissances were carried out by the Aden flight to observe their movements and eventually it was decided to take air action in order to check the ingression.

On 9th July, the Zeidi headquarters at Al Kebuda were bombed with successful results, and on 25th July, Higria and districts were also attacked. These attacks, however, were not sufficient to bring about a retirement of the Zeidi forces and action was continued on the 3rd and 6th August. After this it was reported that 200 Zeidis had succeeded in deserting and, scattering to evade their officers, had managed to escape to their own homes. Further bombing raids were carried out on the 14th and 15th and 22nd and 31st, and operations still continue. A section of the invaders has approached the Audali Sultan with a view to obtaining a separate peace.

PALESTINE AND TRANSJORDAN.

The Transjordan Government resumed control of the Maan vilayet during June. The transfer from Hidjaz administration was peacefully accomplished and the administration is running smoothly under the new *régime*. Four D.H.9.A.s and an armoured car convoy were despatched to Maan in connection with the actual taking over.

During August, the Jebel Druze rising in Syria made it necessary to take precautions to prevent Transjordan tribes crossing the frontier into Syria to join the insurgents. Constant aerial and road patrols were, therefore, carried out in the vicinity of the frontier by aeroplanes and armoured cars.

INDIA.

Nothing of outstanding interest has happened in India during the period under review.

EGYPT.

Conditions remain normal in Egypt. A flight of No. 47 Squadron is still stationed at Khartoum. During June, a flight to El Fasher was carried out by two machines of this unit. The outward journed *viâ* Kosti, landing at El Obeid, took 9¾ hours, and the return journey with General Huddlestone as passenger took 5 hours 5 minutes. It is interesting to note that the outward journey took General Huddlestone 23 days by ground means of transport.

AIR MAIL.—The Cairo-Baghdad service air route contines to operate regularly.

On 2nd July, two Vernons of 45 Squadron flew from Heliopolis to Hinaidi, landing at Ziza and Ramadi *en route*.

Air route duties have been carried out as follows:—

May	Aircraft ...	13 Vernons	1 Victoria.
	Passengers ...	12 R.A.F. ...	3 Army.
	Mail ...	710½ lbs.	
June	Aircraft ...	6 Vernon ...	6 Vimy.
	Passengers ...	15 R.A.F. ...	1 Army.
	Mail ...	779½ lbs.	

July	Aircraft	...	12 Vernon	...	1 D.H.9.A.
	Passengers	...	12 R.A.F.	...	4 Army.
	Mail	...	1,086 lbs.		
August ...	Aircraft	...	7 Vernons	...	6 Vimy.
	Passengers	...	18 R.A.F.	...	
Mail	1,180 lbs.				

CIVIL AVIATION.

THE LIGHT AEROPLANE CLUBS.—Five out of the six light aeroplane clubs projected by the Air Ministry have been started and three of the clubs, at London, Birmingham and Manchester, have begun operations. The De Havilland "Moth" machine with "Cirrus" engine has been adopted by all the clubs, and nine of these machines and four spare engines have been obtained and distributed among them.

The cost of this equipment will be met by the Air Ministry, which has undertaken to grant £2,000 to each club for the purchase of approved flying material, besides a sum of £1,000 towards the expenses of maintenance during the first year and a further sum not exceeding £1,000 during the second year, the exact amount being based on the result of the first year's operations. In addition, the Air Ministry will pay £10 for every member who qualifies for a private pilot's licence on club aircraft.

CLUB FLYING GROUNDS.—The London Club, which was organised by the Royal Aero Club, is based at the De Havilland Company's aerodrome at Stag Lane, Edgware. It was opened on 19th August, with two "Moths." Two salaried instructors are employed, and during September flying was carried out on all but four days, and flying time amounted to over 88 hours. The Club has its own hangar and hopes shortly to have a club room.

The Midland (Birmingham) Club, also with two "Moths," uses the aerodrome at Castle Bromwich which is expected shortly to be acquired for the Royal Air Force. The Club has one paid instructor and two assistant instructors acting in an honorary capacity. At present the Club is handicapped by a portion of the aerodrome being used at week-ends as playing fields, but this disadvantage will be removed when the aerodrome passes under the control of the Royal Air Force.

The Lancashire Club is accommodated at A. V. Roe & Co.'s aerodrome at Woodford, about 10 miles south of Manchester. A. V. Roe & Co. have given the free use of the aerodrome and free shed accommodation. The Club has already done a considerable amount of flying. There are two instructors, who act in an honorary capacity and devote their evenings and week-ends to giving instruction. In addition to two "Moths" this Club possesses an Avro 504K, which was presented to them and is now being reconditioned.

The Newcastle-on-Tyne and Yorkshire Clubs have been delayed by the difficulty of finding suitable aerodromes. The former has decided to use Cramlington, a war-time Service aerodrome which was retained as an emergency landing ground, while the latter has still to find a home suitably placed between Leeds, Bradford and Harrogate, from which centres they expect to draw the majority of their members.

CLUB INSTRUCTORS AND PILOTS.—All the instructors, paid and unpaid, are officers of the Reserve of Air Force Officers, and pilots trained by the Clubs will be eligible so far as flying goes for Commissions in the Auxiliary Air Force. Beyond

this there is no direct connection between the Clubs and the Service, since the primary object of the Clubs is to give facilities for the general public to learn to fly without any military liability or Government control.

AVIATION IN FOREIGN COUNTRIES.

FRANCE.

ESTIMATES.—The following amounts were definitely voted in July :—

596,803,977 francs for Military Air Service.
107,531,800 „ „ Naval „ „
7,816,493 „ „ Colonial Aeronautics.
152,581,700 „ „ Civil Aviation and the Office of the Under-Secretary of State for War.

In the Military Air Service vote is included an item of 80,000,000 francs to the value of which the Minister of War is entitled to order aeronautical material in 1925.

Supplementary credits, rendered necessary by the operations in Morocco, have been voted—

43,698,000 francs—Military Air Service.
1,680,000 „ —Naval Air Service.

MILITARY AIR SERVICE.—The Breguet XIX A.2—the all-metal two-seater Army Co-operation machine—is gradually replacing the Breguet XIV. This aeroplane, as the XIX B.2, is also intended to be a day bomber, but is not being used in bombing units yet.

A squadron of 19 A.2 machines has just completed a circuit of France, during which one aeroplane crashed, the pilot being killed.

It was stated in Parliament in May last that all crews will be provided with parachutes by the end of 1925. Single seater fighter regiments are already being equipped.

NAVAL AIR SERVICE.—A squadron of 6 Farman Goliath seaplanes, with 480 H.P. Jupiter engines, carrying a crew of 5, is reported by the French press to have carried out a remarkable flight from Cuers-Pierrefeu to Casablanca *viâ* Alicante, a distance of 1,500 miles in one day.

This squadron, as well as another that has moved from Bizerta to the Morocco area, is co-operating in the war against Abdul Krim.

OPERATIONS IN MOROCCO.—In addition to the regiment normally stationed in Morocco, the 37th, the following reinforcements have been added :—

2 squadrons from France.
8 squadrons from Algeria.
2 Naval Air Service squadrons (seaplanes).

A squadron of United States aviators has proceeded to Morocco to assist the French, but these are enrolled in the forces of the Sultan of Morocco.

LONG DISTANCE FLIGHTS.—During the last two months the French have essayed a number of long distance flights, some of which have been successful. The details are given below :—

Paris to Angora.—A Breguet XIX, piloted by Captain Weiss, flew to Angora between 14th and 20th August.

Paris to Lisbon.—Captain Weiss, again on a Breguet, made a non-stop flight at the beginning of August.

Paris–Constantinople–Moscow–Paris.—Captain Arrachard, on a Potez 25 aeroplane, with a 450 H.P. Lorraine-Dietrich, made a remarkable flight round Europe in three days, covering a total distance of 4,594 miles in 36¼ hours flying time. The distance flown on the last day was 1,937 miles, in 15 hours in the air.

World's Duration Record.—A Farman Goliath machine, piloted by Messieurs. Landry and Drouhin, broke the world's duration record on 7th, 8th and 9th August by remaining in the air 43 hours 32 minutes, during which time 2,734 miles were flown round a circular course of 100 kms. The record was previously held by the United States.

Paris–Aleppo.—Two aviators, Pitot and Pollin, made an attempt to fly from Paris to Aleppo in order to capture the world's long distance record. They were equipped with a S.E.C.M. machine with a 600 H.P. Renault. The flight was abandoned near Meaux, owing to fog, and in the forced landing all the petrol, 10,000 francs worth, was jettisoned. They intend to fly again.

Paris–Karachi.—A Breguet XIX, piloted by Coste and Thierry, left Etampes on 13th September with the intention of reaching Bandar-Abbas (3,200 miles) or even Karachi, without a landing. This machine, carrying 590 gallons of fuel and 1¼ cwt. of spare parts, crashed in the Black Forest, Thierry being killed. Coste was detained by Germany, and fined M. 25,000 for breaking the German law of 1922 prohibiting the flight over German territory of Allied Civil aircraft of a type superior to that which Germany is allowed to construct under the Allied restrictions. The fine was later reduced to M. 5000.

Paris–Teheran.—Nogues, on a Spad-Blériot, left Paris on September 20th to fly to Persia, *viâ* Constantinople and Baghdad. He is so far unable to complete the journey, as the Turks have refused him permission to fly over the zone comprising Samsun, Sivas and Adana.

In addition to this flight, which is being undertaken by a civilian machine, there are at the moment five other aeroplanes waiting at Paris to fly to Teheran. These consist of three Breguet XIXs, each with a different make of engine, one Potez XXV; these four are French military machines with military pilots. Finally one Breguet XIX purchased by the Persians, and piloted by a Persian officer under Persian colours. These five are to fly in company to Persia.

Paris–New York.—Captain Tarascon and Captain Coli, in a special Potez machine, were engaged on 26th September on a 30-hour endurance trial before attempting to cross the Atlantic, when they were compelled to land owing to storms. In the course of the descent they hit trees and the aeroplane was wrecked, bursting into flames immediately afterwards. The pilots were unhurt, but the attempt has been postponed until next year.

Competition for Commercial Seaplanes.—At the beginning of September a competition was held at St. Raphael for commercial seaplanes. Prizes to the value of 900,000 francs were put up by the Under Secretary of State for Air, and it was understood that Government orders amounting to half a million francs would be given for machines of the successful types.

Out of seven entrants, two only fulfilled the conditions and completed the course; these were both Schreck amphibians, one fitted with a Hispano engine, the other with a Lorraine, the former being 22 m.p.h. faster round the triangular course St. Raphael–Antibes–Ajaccio.

Two competitors failed to return on the 5th and last circuit, and no news has been heard of the missing machines or crew.

ITALY.

CONSTITUTION OF THE ITALIAN AIR MINISTRY.—Aviation, Naval, Military and Civil—has, until recently, been controlled by a Government Department called the "Commissariato per l'Aeronautica." As such its political status was inferior to that of the Ministries of War and Marine. To cite the most important example of this inferiority, it depended, for instance, on other Departments for its Estimates.

When the re-organisation of the Regia Aeronautica, reported in the last number of this JOURNAL, took place, the expediency of constituting an Air Ministry on an equal footing with the Ministries of War and Marine was recognised, but for various reasons this was postponed. The increasing importance of the Italian Air Force, and the feeling that for more effective co-operation between the three Services it was essential that the Air Force should be controlled by an organisation of the same rank as those of the other two Services, have now prevailed.

By a Royal Decree dated 30th August, 1925, the Air Ministry was constituted in place of the Commissariat. The change will not lead to any additional financial charges.

ROME–MELBOURNE–TOKYO FLIGHT.—It was reported in the last number of this JOURNAL that Commandante (Lieut.-Colonel) de -Pinedo, until the time of his departure Chief Staff Officer at the Italian Air Ministry, left Brindisi on the 23rd April on a "Savoia 16 ter" flying boat and arrived at Melbourne on the 10th June, having covered approximately 14,130 miles. Here a halt was made until 16th July. The machine and engine were overhauled, but it was not found necessary to replace any parts, with the exception of two wing struts, which were changed as a measure of precaution.

On the 16th July the flight was resumed to Tokyo *viâ* Sydney, where another halt was called until the 6th August. After this Commandante de Pinedo flew whenever possible, and reached Kasumigaura Naval Air Station, 40 miles north of Tokyo, at 4 o'clock on the 26th September, having covered approximately 8,870 miles from Melbourne. The route followed between Sydney and Tokyo was as follows:—Rockhampton (Queensland), Townsville, Inisfail, Cooktown, Thursday Island, Merauke (Dutch New Guinea), Dobo (Aru Islands), Amboina (Molucca Islands), Menado (Celebes), Ebu (Philippine Islands), Atimonam (Tayabs), Manila, Appari, Tamsui (Formosa), Shanghai, Mokpo (Korea), Kagoshima.

Commandante de Pinero intends to remain at Kasumigaura for about three weeks, during which time his machine will be overhauled and his engine changed. He will then set out on his return flight to Italy *viâ* China, Singapore and India.

It has been freely reported in the Press that his machine is an amphibian. This statement is incorrect. It is a flying boat, a modification of the "Savoia S. 16," which is the standard type of bombing flying boat in the Italian R.A.F. In this case it is fitted with a 450 H.P. Lorraine, instead of the usual 300 H.P. Fiat, engine, and with extra petrol tanks which enable it to fly for ten hours without stopping.

ITALIAN AIRCRAFT FLIGHTS.—The following flights are actually in progress, or are about to take place:—

(*a*) *Eastern Europe.*

Three B.R. 1. aeroplanes left Turin on the morning of the 8th September to carry out a "raid" through Eastern Europe. It was originally intended that this

cruise should be made through the Balkans and Russia *viâ* Vienna, Budapest, Lemberg, Kieff, Smolensk, Moscow, Orel, Cracow, Ekaterinoslav, Odessa, Bucarest, Constantinople, Sofia, Belgrade and so back to Italy.

At the last moment, however, the Russian section was cancelled and the machines, after leaving Lemberg, will now fly to Jassy and then to Bucarest, the rest of the programme remaining the same.

The B.R. 1 is the standard Italian Service Day Bombing aircraft. It is fitted with a 700 H.P. Fiat engine. A flight of these machines visited England last June.

The present flight, after stopping at Udine from the 8th until the 13th September, arrived in Vienna on the latter date. Each machine carries two passengers in addition to the pilot.

(*b*) *Baltic States.*

Two Macchi M. 24 flying boats are preparing shortly to leave Italy on a flight through Mainz, Amsterdam, Esbjerg (Denmark), Gothenburg, Stockholm, Helsingfors, Petrograd, Reval, Riga, Libau (Latvia), Dantzic, Copenhagen. Thence they will return *viâ* the Kiel Canal to Holland and back to Italy along the Rhine.

The Macchi 24 is the new Italian Service torpedo-carrying flying boat.

(*c*) *America.*

Preparations are being completed for a flight across the Atlantic to South America by Count Casagrande, a Member of the Chamber of Deputies, and a distinguished ex-war pilot. The machine used will be a specially constructed Savoia S. 55 flying boat, in which large petrol tanks, giving it a range of approximately 1,250 miles, are being fitted in the hulls.

Two 500-H.P. Asso engines, built by Isotta Fraschini, are being mounted in tandem. It will be the first appearance of these engines. The proposed route will be as follows:—Rome, Gibraltar, Mogador, Rio de Oro, Cape Verde Islands, Fernando de Noronha, Pernambuco, Bahia, Rio de Janeiro, Porto Alegre, Buenos Aires.

PARACHUTES.—Parachutes have now been adopted for compulsory use in the Regia Aeronautica. Two types have been selected:—

(*a*) Freri-Furmanik.
(*b*) Maddaluno.

The latter is a dorsal pattern and the former is linked to the machine by a special alternative release by which the user can leave the machine from either side.

TERRITORIAL AIR ZONES.—In the last number of this JOURNAL it was reported that for the purposes of command the Regia Aeronautica had been divided into three Territorial Air Zones. By Royal Decree an additional two Zones have since been established. The Headquarters of these five Zones are as follows:—

Territorial Air Zone.	Headquarters.
No. 1	Milan.
No. 2	Bologna.
No. 3	Naples.
No. 4	Palermo (Sicily).
No. 5	Cagliari (Sardinia).

JAPAN.

REORGANISATION OF MILITARY AIR SERVICE.—On May 1st, a new system of organisation was introduced into the Japanese Military Air Service. The Air Service became an independent arm attaining equal status with Cavalry, Infantry, Artillery, &c.

The nomenclature of the units, hitherto known as "battalions," was altered to "regiments."

Battalions consisted of 2 or 3 companies or squadrons. Under the new scheme each regiment will consist of 2–4 squadrons.

The present strength of the Air Service is 16 squadrons, which will be increased to 26 squadrons when the expansion is complete. A corresponding increase in *personnel* will also take place. The date of completion of this scheme is estimated at 1930.

JAPAN–EUROPE FLIGHT.—Under the auspices of the Japanese newspaper, the *Asahi Shimbun*, two Breguet XIX A. 2 aeroplanes, made under licence in Japan, left Tokyo on July 24th. Travelling *viâ* Osaka, Korea, Manchuria and Siberia they arrived at Moscow on August 24th. They then continued *viâ* Königsberg, Berlin, Strasbourg and Paris, where they arrived on 28th September. They completed their journey to London and arrived at Croydon on 12th October.

The crew consists of two pilots, Major Abe (an officer of the Reserve) and Mr. Kawachi, and two mechanics.

RUSSIA.

MOSCOW TO PEKIN FLIGHT.—The following further particulars are now available concerning the flight of five Russian aeroplanes from Moscow to Pekin, the earlier details of which were given in Air Notes for August last.

As reported, the five machines reached Irkutsk on 25th June, 1925, having covered approximately 3,000 miles in sixteen days, and having stopped at fourteen intermediate aerodromes and landing grounds *en route*.

The machines left Irkutsk on 29th June, and from then onwards appear to have experienced trouble.

Two machines reached Urga on 1st July, and the other three straggled in later.

At Urga the flight was held up partly owing to mechanical defects and partly owing to local dust storms. On 9th July the flight left for Ude, where four machines arrived safely the same day. The fifth, named the "Pravda," had a forced landing 125 miles west of Ude and was slightly damaged. Four machines reached Pekin on 13th July, and the "Pravda" arrived a day or two later.

Thus the ramaining 1,500 miles were covered in fifteen days and the whole distance of 4,500 miles was accomplished in five weeks.

No details are available at present, but it is believed that at least three forced landings were experienced by the flight, that two or three engines were changed *en route*, and that the machines proved in many respects unsatisfactory.

The leader of the flight was a German pilot named Schmidt. The aircraft carried a total of 20 persons, including 4 journalists and 1 cinematograph operator.

PEKIN TO SHANGHAI.—Two of these Russian machines left Pekin on 12th August and, flying *viâ* Kaifeng and Nanking, reached Shanghai on 20th August. According to a press report, one of the machines was a Junkers all-metal monoplane, carrying two cabin passengers, a pilot and a mechanic, and the other was a British D.H. 4 (with a Rolls Royce engine and British instruments), carrying only a pilot and his mechanic.

PEKIN TO TOKYO.—On 31st August another two of the Russian machines left Pekin for Tokyo, flying *viâ* Chinchow, Mukden, Seoul, Heijyo, Taikyu, Hiroshima and Okayama. One machine reached Tokyo at 4.45 p.m. on 2nd September. The other machine was forced by fog, on 1st September, to land near Shimonoseki, on Hikoshima Island, and was reported to have been dismantled by the Japanese authorities and removed to Hiroshima, as it had landed in a prohibited area.

TURKEY.

TURKISH AIR LEAGUE.—An Air League or Association was formed in Turkey at the beginning of the present year for purposes connected with the development of aviation in that country. The League, although not a Government Department, enjoys the full support of the Government, and includes among its members the Minister, Officers of the Navy and Army and other Government officials.

It has been very active recently in collecting subscriptions for the purpose of purchasing aircraft, and it is believed that a total sum of half a million English pounds has now been raised. Various methods have been employed to obtain these subscriptions, such as a Press propaganda campaign, leaflets dropped from aeroplanes, lotteries, dances and concerts. Pressure is, when necessary, exercised on persons with fixed incomes to bring them to contribute a definite portion to the League. Merchants and trading concerns, even those of British nationality, are firmly persuaded to contribute in accordance with their supposed means.

The activities of the League, which has branches in all towns and villages, correspond almost entirely with those of the Turkish Navy Association, which, in the years preceding the Great War, collected enough money to purchase two Dreadnoughts. A committee from the League has recently made a tour of Europe inspecting aircraft manufacturing companies in Germany, France and Italy, and it is expected that orders will be placed in these countries for various types of aircraft.

UNITED STATES.

BOARD OF INQUIRY ON USE OF AIRCRAFT IN NATIONAL DEFENCE.—On the suggestion of the Secretaries of the War and Navy Departments, the President has appointed a Board "for the purpose of making a study of the best means of developing and applying aircraft in national defence and to supplement the studies already made by the War and Navy Departments."

The Chairman of the Board is the Hon. Dwight W. Morrow. The other members are Judges Arthur C. Denison (Vice-Chairman), the Hon. William F. Durand (Secretary), Senator Hiram Bingham, Representative James S. Parker, Representative Carl Vinson, Major-General James G. Harbord (Retired), Rear-Admiral Frank E. Fletcher (Retired), the Hon. Howard E. Coffin.

In opening the proceedings on 21st September, the Chairman stated that the Board would make free use of the voluminous and valuable data secured at the inquiry held by the Select Committee of the House which sat earlier in the year and would avoid duplication and interruption of the work of the air services as far as possible.

The Board first called on representatives of the War, Navy and Post-Office Departments. Subsequently, flying officers of both services are being heard.

ATTEMPTED FLIGHT TO HAWAII.—An attempt was made by Naval flying boats to perform a non-stop flight from San Francisco to Hawaii, a distance of 2,030 miles. The flight commenced on 31st August, when Flying Boat P.N. 9 No. 3, commanded by Lieutenant A. P. Snoddy, left San Pablo Bay, San Francisco, at 2.41 p.m., and P.N. 9 No. 1, commanded by Commander J. Rogers, followed at 2.56 p.m.; a

third flying boat, a new type known as the P.B. 1, was prevented from taking part in the flight owing to trouble in the lubricating system.

The flight commenced uneventfully, the boats flying about 7 miles apart, when approximately 300 miles off the coast of California the P.N. 9 No. 3 was forced down owing to oil pressure trouble, and was compelled to retire. It was successfully salvaged by the U.S. Tender "Gannet."

The progress of the P.N. 9 No. 1 was uneventful for the first half of the journey and averaged approximately 73 m.p.h. At 1 p.m. on 1st September, the flying boat had covered 1,600 miles, having then only 430 miles to go. From that time no further news was heard. The weather at this point was bad, and the sea rough.

In spite of a thorough search being made, the flying boat was not located until 218½ hours after it had been forced down owing to petrol shortage, when it was found by the U.S. submarine R. 4, and the crew rescued. The flying boat had drifted 450 miles. The wireless apparatus was damaged sufficiently to make broadcasting impossible, although the receiving apparatus was intact. The damaged plane was towed to Nawitile, Kawai.

It was ultimately decided that the P.B. 1 should not attempt the flight.

The P.N. 9 flying boats were built by the U.S. Naval Aircraft Factory, and have a cruising range of 2,200 miles, while the P.B. 1 was built by the Boeing Aircraft Co., of Seattle, Washington, and has a range of 2,500 miles. All are twin engined flying boats, and each carries a crew of five.

ROYAL AERONAUTICAL SOCIETY.

EDWARD BUSK MEMORIAL PRIZE.—From the income of the above Fund, a sum of Twenty Guineas will be offered as a prize for the best paper received by the Royal Aeronautical Society on some subject of a technical nature in connection with Aeroplanes (including Seaplanes).

The prize is open to international competition. The Royal Aeronautical Society retains the right to withhold the prize in any year if it is considered that no paper is of sufficient merit to justify an award.

Intending competitors should send their names to the Secretary of the Royal Aeronautical Society, 7, Albemarle Street, London, W.1, on or before 30th September, 1925, with such information in regard to the projected scope of their papers as will enable arrangements to be made for their examination. The closing date for the receipt of papers will be 31st December, 1925.

Papers, which must be submitted in either French or English, should in all cases be typed, and a copy should be retained by the Author, as the Society can take no responsibility for the loss of copies submitted to it.

Successful papers will become the absolute property of the Society, and will in most instances be published in the *Journal of the Royal Aeronautical Society*. A signed undertaking must accompany each paper to the effect that publication has not already taken place and that the Author will not communicate it elsewhere until the Society's award is published.

The Society attaches special importance to papers showing original work, and due acknowledgment must be made by the Author of the source of any special information.

"R. 38" MEMORIAL PRIZE (FOURTH YEAR).—From the income of the above Fund a sum of twenty-five guineas will be offered as a prize for the best paper received by the Royal Aeronautical Society on some subject of a technical nature in the science of aeronautics. Other things being equal, preference will be given to papers which relate to airships.

The prize is open to international competition. The Royal Aeronautical Society retains the right to withhold the prize in any year if it is considered that no paper is of sufficient merit to justify an award.

Intending competitors should send their names to the Secretary of the Royal Aeronautical Society, 7 Albemarle Street, London, W.1, on or before 31st December, 1925, with such information in regard to the projected scope of their papers as will enable arrangements to be made for their examination. The closing date for the receipt of papers will be 31st March, 1926.

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AIRSHIP NOTES.

GREAT BRITAIN.

REPAIRS TO R. 33.—The redesigned bow of H.M. airship R. 33, which has been constructed at Pulham, was hoisted into position about the middle of August and the work of joining it up to the remainder of the airship structure was completed by the end of September.

A flight was carried out on 5th and 6th October with the primary object of obtaining data as to the stresses encountered by the airship in flight and a number of automatic recording instruments were installed at various points of the ship's structure for this purpose.

EXPERIMENTAL WORK.—A number of sections of one of the old rigid airships, R. 80, will shortly be subject to structural tests to obtain definite data as to the forces that the hull structure of an airship will stand.

Tests on a new type of girder for the new 5,000,000 cu. ft. airship, R. 101 have now been carried out, with satisfactory results, and it is expected that a complete section of the airship will be erected by the beginning of 1927 to enable structure tests to be carried out. This section will be subjected to tests to ascertain how far the actual imposition of stresses will agree with the results obtained by theoretical calculations.

AIRSHIP STATIONS.—*Cardington.*—Work is proceeding on the enlarging of the Cardington shed and it is anticipated that a 200 ft. section will be completed and sheeted in by about the end of October; the entire shed should be finished early in the New Year.

A mooring mast, which will be 200 ft. high, is now in course of erection and should be ready for operation by the end of the year. All subsidiary services, such as the road, hydrogen and water mains, are now nearing completion.

Pulham.—The head of the Pulham mooring mast has been modified so as to provide, as far as possible, an increase in the strength of the structure.

ITALY.

POLAR FLIGHT.—Captain Amundsen has bought the airship N. 1 from the Italian Government and intends to use it for his next Polar expedition. It is believed that Colonel Nobile, the designer of the airship and the head of the Italian Airship Service, will go as captain. The N. 1 made its maiden flight in April, 1924. It is a semi-rigid, 347 feet long, with a cubic capacity of 671,000 cubic feet. It is fitted with three 250 h.p. Maybach engines and has at present an endurance at cruising speed of 64 hours.

Various modifications will be required before it starts, of which the following are the most important :—

(*a*) A general lightening of all the structures in order to increase its range.
(*b*) Adapting the ship for mooring to a mast.

The proposed route is Rome, Pulham, Trondhjem, Spitzbergen, and along the Polar coast to Alaska.

It will be necessary to erect masts along this route wherever possible at selected stopping-places which are not provided with sheds.

UNITED STATES.

DISASTER TO "SHENANDOAH."—Serious loss of life attended the wreck of the naval airship "Shenandoah" during the early stages of a flight from Lakehurst, New Jersey, into the Middle West States. Five officers, and 9 other ranks, including Lt.-Commander Zachary Lansdowne, U.S.N., the commanding officer, lost their lives.

The airship left the mooring mast during the afternoon of 2nd September, 1925, and with little warning encountered an electrical storm of great violence about fifteen hours later, when approaching Cambridge (Ohio), at 4 p.m.

According to the barograph, which was salvaged, violent changes in weather conditions occurred. The temperature fell from 72° to 60°. The ship first rose to a height of 1,500 feet, remained at that altitude for a time, when suddenly it rose again to 2,400 ft. A decrease in altitude was followed by a violent increase to about 6,000 feet, which was maintained for a few seconds. Then came the sudden crash to earth.

The ship was broken in three parts, the bow, the mid-section, and the stern, the control car afterwards breaking away from the bow section. The stern portion landed at Ava, Ohio, with 17 of the crew uninjured. The control car crashed one mile from the stern. The mid section crashed near the control car, three of its occupants being uninjured, the other only slightly injured; while the bow portion drifted about 10 miles, subsequently coming to earth at Caldwell, Ohio, carrying 7 of the ship's crew, who were uninjured. Records show that all the deaths occurred among the control car occupants.

An official investigation is being made into the cause of the wreck.

SENIOR SURVIVOR'S REPORT.—According to the *Army and Navy Journal*, of Washington, Lt. Comdr. Charles E. Rosendahl, U.S.N., the senior surviving officer of the "Shenandoah," in a telegraphic report to the Navy Department about the disaster, said :—

> "Mild storm suddenly followed by violent line squall subjected ship to enormous uncontrollable angle strains and rapid vertical ascent, resulting in ship's structure breaking in two, at about 7,000 feet, at vicinity of frames 130 and 90. Control car very quickly wrenched free in air, undoubtedly precipitating occupants. Forward wing cars wrenched from ship's structure in air.
>
> "Forward section of ship, free-ballooned approximately one hour with seven occupants, McCarthy being knocked out of ship by tree in landing. Midship section crashed with three occupants, only Gunner Cole being injured in landing. Injuries not serious. After section crashed, but landed 17 occupants safely.
>
> "Forward section of ship landed at Sharon, about 10 miles east of other sections, which landed at Ava. Probably eight casualties from radio and control car. Probably three casualties from keel and three from forward wing car.
>
> "Those with me in the nose of the ship were Col. C. G. Hall, U.S.A., observer; Lt. W. G. Mayer; Lt. J. B. Anderson; Chief Machinist's Mate Shevlowitz; and J. F. McCarthy, aviation chief rigger.
>
> "Sections of ship were deflated by hand completely and anchored as well as possible.
>
> "No fires during or after disaster."

In connection with the last sentence of this Report, it is noteworthy that the "Shenandoah" was filled with helium gas.

(*See also Navy Notes, p.* 788.)

REVIEWS OF BOOKS.

The Problem of Defence. By Sir George Aston. (The Westminster Library. Phillip Allan and Co.)

The problem of national and imperial defence is one that should now be tackled at frequent intervals. The factors of the problem have always been subject to change; but, formerly, the change was slow and gradual; now, owing to the quick march of science, it is unpleasantly rapid. If we except the temporary elimination of our principal enemy of recent years, the main changes since the War have been to our detriment. The menace of aircraft and gas attacks on our ports and industrial centres is one of the gravest with which this country has ever been confronted. The very large increase in oil-burning ships is cancelling one of our greatest assets. Our territorial responsibilities have greatly expanded, though our armed forces have been considerably reduced.

Sir George Aston discusses these matters and many others in a clear and interesting fashion. He is very anxious that policy should be based and armaments maintained on established principles, instead of the vague generalities and pious hopes that have lately been prevalent. But he himself is a little inclined in his treatment of the defence of Canada and Ireland to depend on the "pious hope." If civil war is conceivable, then any other war is conceivable, and it is, therefore, well to keep our powder dry against all eventualities.

He gives an amusing account of the rancorous dealings between the Admiralty and the War Office in his early days; of co-operation avoided like poison; of vitriolic correspondence; of the jealous guarding of secrets from one another, which it was vital both should share. These conditions prevailed, in the absence of a Prime Minister who took a serious interest in defence policy, until the advent of Mr. Balfour and the institution of the Committee of Imperial Defence.

The author's literary gifts are well known. He covers the whole of his subject effectively in a wonderfully small compass, but he might perhaps have laid more stress on the difficult task our Navy may have in future in maintaining our communications and on the danger of our commitments in the Middle East.

The Direction of War: a Study and Illustration of Strategy. By Major-General Sir W. D. Bird, K.B.E., &c. Second Edition. (Cambridge University Press.)

This work has already been reviewed in these pages. It has justly come to be regarded as the premier text-book on purely military strategy in the English language, and, within that sphere, it preserves the same qualities as in its previous edition. The price, moreover, has been reduced from two guineas to one guinea —a welcome feature.

It is, however, much to be regretted that General Bird should not have taken such an invaluable opportunity of adding to his work some more comprehensive lessons touching the combined work of the Royal Navy, the Royal Air Force and the Army in the future. The part played by the Navy and Air Force in "combined operations" of the Great War is scantily treated; the *rôle* played by the Fleet and Air Force on the Belgian coast is not even mentioned. Yet these aspects of war may be of vast importance in the future. Neither do tanks, gas

or chemical warfare receive, what at any rate may appear to the regimental officer who gained a first-hand acquaintance with these methods of destruction between 1915 and 1918, sufficient consideration. In particular, the dismissal of air warfare on pages 95-98 seems a trifle summary. But it is clear that General Bird has in mind mainly the lessons of warfare on the grand or Continental scale as it was seen by the General Staff in France; inland warfare thus is alone contemplated at length. Orthodoxy is also the key note of the book. But aerial, chemical and industrial warfare—here we cannot agree with General Bird—will alter the problem of the future more than he appears to admit. The time is clearly coming when war will also have to be studied from other aspects—economic, industrial and psychological. The interpretation of the phenomena of the conflicts of nations will have to be widened; they will no longer be the preserve of the purely military expert. This belief, however, does not lead to any lessened admiration for this book within the limits defined above.

British Light Infantry in the Eighteenth Century. By COLONEL J. F. C. FULLER, D.S.O. (Hutchinson and Co.)

This book has a wider scope than its title suggests; it is to trace to their origin those principles of Infantry Training which are so admirably treated in a former book, "Sir John Moore's System of Training." We are, therefore, given in a compressed form the history of the evolution of the Infantry arm from its rediscovery in the 15th century down to the end of the 18th.

Thus, the author shows how it has been the invention of, and improvement in, weapons—or, in other words, scientific progress—which through this long period proved the decisive influence on tactics. The means to the end were changing, and so the methods also had to change. But the improvement of artillery in the 15th century had disposed of the "laager" tactics—the moving-fortresses of waggons; so the coming of the "hand-gun" sounded the knell of the French Chivalry; and in the 16th century the musket produced the systems of Maurice of Nassau and of Gustavus Adolphus—and in these, perhaps, may be found the first germ of Light Infantry tactics. "As the musketeers became more numerous, they were organised in separate bodies of skirmishers and were placed at the four corners of the square of pikes." As fire-power developed and its importance came to be realised, "the square of pikes" became a hollow square, then the four sides became separate units, then a three line formation was adopted, with the pikemen definitely relegated to the reserve, while the musketeers carried forward the fire-fight.

Early in the 17th century comes the growth of manœuvre—first as a means, later as an end in itself; the old blocks of pikemen have drawn out into the long line of infantry; the skirmishing musketeers, for a short time "fusiliers," have been absorbed, as their particular weapon became the general arm; the bayonet arrives, consolidating linear fighting and the frontal attack; for a time Light Infantry is dead. During the first half of the 18th century it was very effectively smothered by the ponderous gymnastics of the jointless, rigid cohorts of Marlborough and Villars. Then came Braddock's defeat on the Monongahela River on the 9th June, 1755. "In spite of the lessons of history, of which Braddock, in common with the Officers of his age, had no knowledge; in spite of local experience . . . he determined to defeat the most agile and skilful irregulars . . . by means of the triple line and the broadside volleys of Frederick the Great! . . . Braddock was not an incapable officer as most historians paint him. He had taken every precaution against surprise; his only

fault was that he attempted to carry out a system of tactics which ninety-nine out of every hundred officers in Europe considered the '*ne plus ultra*' of perfection." Christmas Day, 1755, saw the birth of the 60th Royal Americans. Thus was broken the ice of old tradition and a generation later there arose an Army never before equalled.

Although it required the experiences of savage and Colonial warfare to upset the old system, and although the new methods were an adaptation of the tactics employed by the enemy, it is interesting to estimate how far these were the result of accidents of *terrain*, of climate, of custom, rather than the result of a logical and economical use of the available weapons. Here was no exception from the rule that the weapon decides the tactics; the means, the method.

"Nearly every modern war," says Colonel Fuller, "has found an army well-drilled and has left it well-trained." The American War of Independence was no exception—but in 1783 the War—and Training—ended, and Drill reasserted itself, for those who had occupied high places (at home) were not disposed to take as "gospel" the stories of a younger generation who, though indeed they had fought, had fought only against "irregulars." A combination of prejudice, ignorance and parsimony resulted in a disastrous decade for the British Army, in which the lessons of the previous thirty years were almost forgotten; and so it came about that on the outbreak of the Revolutionary Wars, when Light Infantry tactics had swept the fields of the Netherlands and Flanders, England had no trained Light troops. If a redeeming feature is her realisation of their necessity, the wholesale engagement of mercenaries to that end was scarcely dignified.

Hanoverians and Hessians were engaged in thousands, and from 1793–1798 the light troops of the British Army consisted, almost without exception, of these mercenaries. From the Germans we learned much—for, curiously enough, they had not omitted, as England had, to draw valuable conclusions from the American Wars—and in 1793 a true Battalion of Light Infantry was raised in the Isle of Wight. Even so, its Commander was an Austrian and the men chiefly Germans. The experiment, however, proving successful, the authorities were convinced, and in 1800 (forty-five years after Braddock's defeat) the formation of an "Experimental Corps of Riflemen" was authorised, under the command of Lieut.-Colonel the Hon. William Stewart; and from that day Light Infantry was established in the British Army.

If Colonel Fuller displays the past it is as a mirror of the future. We are faced with new weapons. The means have changed, the methods must change; tactics must conform to the armoured machine, on the earth and in the air. And discipline, too, must conform. "Without a new discipline our tactics will be in vain; this was the lesson Light Infantry taught the armies of the world during the 18th century, and this is the lesson armoured Infantry will again teach the world during the 20th.

Wellington: the Crossing of the Gaves and the Battle of Orthez. By MAJOR-GENERAL F. C. BEATSON, C.B. (Heath Cranton, Limited.)

This volume follows naturally and appropriately upon the author's earlier work, "With Wellington in the Pyrenees," and the two together provide for us a very clear and detailed account of operations which, always somewhat obscure

to the ordinary student of the Peninsular War, have never received quite all the study and attention which are their due.

The first three chapters are especially illuminating and give an admirable picture of the situation in Europe generally and in Spain in particular, immediately previous to the operations with which the book treats; we have an excellent presentment of the British Army, then, as General Beatson reminds us, "in the full flower of its morale, its experience, its steadiness, its marksmanship which its opponents could not bear or challenge, full of confidence in itself and in its leader, wayward sometimes and needing to be held with a tight rein, but never dismayed"; and also of the French Army, no unworthy opponent, though the defeat at Vittoria, the retreat from Sorauren and the result of the battle of the Nivelle all had a disastrous effect on its morale. We are so accustomed to hear how much of Wellington's success was due to British command of the sea, that it may come as something of a surprise to some of us to read in General Beatson's pages how precarious that command of the sea occasionally became, since at the time, England was at war with two Great Powers, and the various seas and the coasts of the Peninsula were infested by privateers of both, while of the vessels carrying supplies to our army in the field, one was a vessel of no more than 84 tons, and the largest of 465 tons only.

Of the marching and fighting, the crossing of the Gaves and the Battle of Orthez, the author supplies an almost day by day account; he has drawn largely and skilfully upon all the official records of both nations, the histories published in French and English, and upon many regimental records, especially upon some of those regiments of the Hussar Brigade which have appeared in recent years. In a pocket at the end of the book are four very clear maps, while the book is illustrated by a number of photographs which afford an excellent idea of the nature of the ground fought over.

Warriors in undress. By F. J. HUDLESTON. (London: John Castle, 1925.)

Admittedly, Mr. Hudleston's book is written in a light vein, and, to those who are well versed in the men and matters of the last century and a half, is most entertaining; still, without the possession of a deep knowledge of the chief characters in the political and military drama of the period, many subtle points of wit may be wasted on the reader. In the latter part of the book the Author pokes fun at everybody and everything—himself included; in fact, at times he rather strains after effect in order to keep the humour going. In spite of this, parts of the book are of serious interest: the story of the growth of the War Office Library; the thumb-nail sketch of Washington's famous Lieutenant, Von Steuben; the tardy justice done to the memory of Frederick, Duke of York, as a builder of the British Army and an improver of the lot of the men in the ranks; the chapter on the curious causes of wars; all these are grains of good wheat winnowed from the chaff of scholarly gossip which is always sparkling and amusing, if sometimes irrelevant.

The author excels in quotations in vast profusion, in languages both living and dead. But there is one he has forgotten: "De mortuis, . . ." Was it truly necessary, in order to "raise a laugh" to rake out certain incidents which are displayed in the first few sketches? We are all human and frail; is it fair to the memory of men who have, after all, done great things, to make fun of their weak points without paying some tribute to their strong ones? The Duke of York receives full justice, but he is rather the exception.

Campaigners, Grave and Gay. By LIEUT.-COLONEL L. H. THORNTON, C.M.G., D.S.O. (Cambridge University Press.)

This volume of 300 pages contains a pleasantly written account of Maurice de Saxe, Sir Robert Rollo Gillespie, Lord Peterborough and James Wolfe, which might be read to advantage in an idle hour or after dinner. But the book can scarcely be styled an original or profound study of these four commanders; moreover, with the exception of Gillespie's, their careers are, or should be, already familiar. The biographies would be better arranged chronologically and in the guise of a continuous representation of 18th century warfare, with apposite comments. It is interesting to find in a single volume a brief account of the battles of Dettingen, Fontenoy, Roucoux and Laufeldt, for these are as striking and worthy of remembrance as many of the actions of the Great War. The maps contained in the volume are not really adequate for the purpose of an attempt at serious study.

An Account of the Battle of Liao Yang, 1904. By MAJOR-GENERAL SIR W. D. BIRD, K.B.E., &c. Aldershot. (Gale & Polden, Limited.)

As a succinct narrative of this great Manchurian battle, this little book is distinctly good. The maps are clear; the criticising apposite and well balanced. But in so small a compass it would be almost, in fact it is, impossible to expect an adequate picture of the entire campaign. Promotion exam. candidates with a fuller account by their side will find this book very useful.

Letters of a once Punjab Frontier Force Officer to his Nephew. By COLONEL J. P. VILLIERS-STUART, C.B., &c. (London: Sifton Praed & Co., Ltd.)

The author's name alone should be sufficient to command the reader's respect. Rightly so, for Col. Villiers-Stuart not only possesses a vast fund of frontier experience, but he is also an Instructor of distinction. In fact the book, in no more than 80 pages, sets out all that the young officer need know of the frontier and of frontier fighting *from the infantry standpoint.*. It might be objected that the treatment is "scrappy" and the style too "chatty." But the author knows the type of audience he is addressing. Is it too much to hope that he may yet give us a more complete work for the benefit of senior officers of all arms and for aspirants to staff distinctions in frontier campaigns?

Sam Noble, A.B.—'Tween Decks in the 'Seventies—by Himself. (Sampson Low.)

The autobiography of an able seaman (is this unique?) may reasonably be expected to provide entertainment, and should the reader seek no more in this one, it can be recommended to him. In addition to funny stories—chiefly of the knockabout variety, which, happily, few of us are too superior to enjoy—there is an undercurrent of humour that may not be altogether conscious.

In a preface, Rear-Admiral A. P. Davidson, D.S.O., stresses the immense difference between lower deck life in the 'seventies and that of the present day; but this difference, as one reads, does not seem so great—perhaps because the spirit is unaltered.

Sam Noble was swept into the Navy upon a wave of eloquence from a Royal Marine recruiting-sergeant; and though he mentions that he would have enjoyed seeing this worthy "half-murdered" three months later, he admits that after eight years he "would have fallen upon his neck and embraced him."

From the training-ship "St. Vincent" he went to the "Victory," where, naturally, veneration for Nelson was intense; and here he committed a terrible crime. Being ordered, as a correction for a small offence, to stand in front of Nelson's picture for two hours and "absorb" the great admiral, he tired of the occupation and, putting his thumb to his nose, extended his fingers "till the little one landed right on the tip of the immortal nose." He was caught in the act!

Subsequently, a long cruise to Africa and South America in the "Swallow," a first-class gunboat, is described at length. This provides good reading if one does not succumb during two chapters that are packed with slabs of poetry.

As an instance of the author's recurrent philosophy, I quote his thoughts expressed at sight of some ancient trees: "These things," he says, "make you think big! I don't wonder at travellers, tramps and sailors being men of large mind."

Makers of Naval Tradition. ALDEN and EARLE. (Ginn & Co.).

This book is written in fifteen chapters, each, with the exceptions of the first and last two, giving an account of the work of one great figure in American Naval History, from John Paul Jones to William Thomas Sampson. The first chapter is introductory and the last two deal with the World War and subsequent events from the point of view of the U.S. Navy.

"At the time," the authors say, "when the genius of Nelson was first generally recognised . . . the United States Navy came into existence. We were then but lately separated from the mother country, and the spirit of hostility had not altogether died out. Nevertheless, the best model was followed: British discipline, regulations, and traditions were adopted for America."

Perhaps the most interesting chapter is that on Mahan. In it is recorded the genesis of his book "Sea-Power," from reading Mommsen's "History of Rome." "It suddenly struck me," Mahan is quoted as writing, "how different things might have been could Hannibal have invaded Italy by sea." And he formed the plan of investigating "coincidently the general history and naval history of the past two centuries, with a view to demonstrating the influence of the events of the one upon the other."

The authors of this patriotic book should realise their hope that "the youths studying to become officers will by means of this book be led to realise more fully their debt to the great men who have preceded them in the Service."

"All the World's Aircraft," 1925. Compiled and edited by C. G. GREY. (Sampson Low).

World aeronautical progress continues to be traced faithfully and fully year by year in "All the World's Aircraft," founded by the late Fred T. Jane. The 1925 issue, which is edited as former issues have been, by Mr. C. G. Grey, is a work of great value to all interested in man's struggle for mastery of the air. Details of many of the latest aircraft, including airships, are given in this volume and there is a large number of illustrations comprising both photographs and diagrams.

It seems that nothing approaching standardised aeroplane and seaplane types for the various different kinds of work have been arrived at yet. In fact the individuality of many of the machines leaps to the eye immediately the illustrations are examined. Perhaps a tendency towards three-engined commercial machines is indicated, perhaps the return of the monoplane to favour for certain purposes may be foreseen, but, on the whole, the ideas of aeronautical engineers seem still to be unsettled and to be wandering in search of new paths towards perfection. The heavier-than-air craft is a healthy and vigorous child which is, as yet, unchained by habit and is consequently so much the more interesting. Rigid airship design appears more stable. Commander Burney's 5,000,000 cubic ft. vessel, of which approximate dimensions are given, is the only one showing radical departures from the form originated by the German Zeppelin engineers.

"All the World's Aircraft" succeeds in being at once informative and deeply interesting.

REGIMENTAL HISTORIES.

History of the 2nd King Edward's Own Goorkhas (The Sirmoor Rifle Regiment), Vol. II. By COLONEL L. W. SHAKESPEAR, C.B., C.I.E. (Gale and Polden, Ltd.)

This volume begins with the Abor Expedition of 1911, the point where volume I. came to an end.

In August, 1914, both battalions were at Dehra Dun. The 2nd Battalion then left India for France in the Meerut Division of the Indian Army Corps. It fought from Neuve Chapelle to Loos, the casualty list during that time amounting to 29 British officers, 40 Goorkha officers and 950 other ranks. In November 1915 the Battalion left France for Egypt, where it remained until the following February, when it returned to India.

Between March, 1916, and the end of 1920 the 2nd Battalion was employed in punitive operations against the Maui tribes near Sibi, in the third Afghan War, and in the operations more or less connected with that attempted invasion which for some months were thereafter carried out in Waziristan.

The 1st Battalion in March, 1916, was sent to Mesopotamia, joining at Basra the newly-formed 37th Brigade. It was in action at the Dujaital Redoubt in March, 1916; at Abu Roman in April; at Beit Alessa, and at Sannayat—in fact, in practically all the fighting connected with the efforts to relieve Kut. Then in the following year it fought at the Khadairi Bend, at the Hai, and at the Diala. From thence onwards it saw much arduous service with the North Persian Force.

In 1916 nearly all Goorkha regiments raised third battalions. It seems hardly credible that so small a state as Nepal, with a population of hardly more than five and a half millions, could stand the strain of so much extra recruitment of its man-power. "But it did, thanks to the good offices of the Prime Minister of Nepal; recruits came in freely, and it is estimated that during the period of the war and up to about 1920 some 210,000 men left that country to serve the British Raj in various capacities connected with that period of stress"!

Colonel Shakespear has told his story well and with historical accuracy. His publishers can have seldom turned out a better-produced regimental history. There are a number of excellent illustrations and a real wealth of maps and sketches, while the appendices contain many details of great interest.

History of the Manchester Regiment, Vol. II., 1883–1922. Compiled by Colonel H. C. WYLLY, C.B. Illustrations in colour by Gerald C. Hudson. (Forster Groom & Co., Ltd.)

During the period of forty years covered by this volume the Manchester Regiment was engaged in the South African War of 1899-1902—the first Battalion was in Ladysmith during the siege—and the Great War; whilst the 1st Battalion did trying duty in Ireland during 1920-1, and the 2nd was on active service in Mesopotamia in 1920. Moreover four Regular Battalions were in existence from 1900-1906.

This makes a crowded story, although the volume does not include the history of the Territorial and Service Battalions of the Regiment during the Great War.

The volume under notice maintains a rough chronological sequence. The story closely follows the official battalion records, with occasional quotations, sometimes without great discrimination, from other war books, while events are related in as much detail as can be expected considering that there are less than 230 pages of text.

There is a sufficiency of illustrations and of general maps in a pocket at the end of the book, but, with the solitary exception of the 2nd Battalion at Le Cateau, August 26th, 1914, no attempt has been made to provide battle plans or situation maps. Appendices are numerous and detailed. They include special accounts of the fleur-de-lys badge and the Brunswick star; a complete list of Colonels, with another of all officers of the 63rd Foot, 96th Foot and the Manchester Regiment; and a roll of decorations won from the Crimean War onwards, with portraits of the V.C.s and a description of their deeds. Of special interest is the table of casualties suffered by all battalions of the Regiment in the Great War, showing 14,122 of all ranks killed or died, and an approximate total of 45,000 dead, wounded and missing. There is a copious index.

History of the Queen's Royal Regiment, Vol. VII., 1905–1923. Compiled by Colonel H. C. WYLLY, C.B. (Gale and Polden, Ltd.)

This is a continuation of Colonel Davis's history of the Queen's and covers the period 1905-1923, but, as is inevitable, the contents are almost wholly devoted to the Great War. The preface is from the pen of Major-General Sir W. D. Bird. Eleven battalions of the Queen's served overseas, and the Regiment was represented not only on the Western Front and in Italy, but also in Gallipoli, Egypt, Palestine and Mesopotamia and on the north-west frontier of India. Considerable compression has thus been necessary, since each unit is treated separately.

The narrative throughout is based upon the battalion war diaries supplemented by quotation from official despatches, and even by short extracts from divisional histories of varying value. An excellent feature is the display of Battle Honours at the head of the chapter describing the actions in which they were won.

In the appendices will be found summaries of the war effort of the various Regimental and West Surrey organisations, such matters as battalion strengths and casualties finding their appropriate places in the text.

No special prominence is given to the deeds which won decorations, though ample justice is done to the gallantry of the late Colonel Bushell, V.C., D.S.O.

In a separate case there is a series of general maps covering all the principal theatres of operations. But these do not compensate for the lack of sketch maps showing the positions of troops in relation to the trenches and positions mentioned in the accounts of the various actions. The volume has a wealth of illustrations, the most noteworthy being a reproduction from a photograph showing the 7th Battalion in action on the first day of the Battle of the Somme, 1916. There is a good index.

PRINCIPAL ADDITIONS TO THE LIBRARY.

July, August, September and October, 1925.

A FLYING VISIT TO THE MIDDLE EAST. By the Rt. Hon. Sir S. Hoare, Bart., C.M.G., M.P. 3s. 6d. 8vo. (The University Press, Cambridge, 1925.) (Presented by the Syndics of the Cambridge University Press.)

ALL THE WORLD'S AIRCRAFT. Edited by C. G. Grey. £2 2s. folio. (Sampson Low Marston Co., Ltd.) 1925. (Presented by the Publishers.)

COMBATS ET BATAILLES SUR MER (SEPTEMBRE 1914–DÉCEMBRE 1914). Par C. Farrère et P. Chack. 8vo. Paris, 1925. (Presented by the Author.)

A HISTORY OF THE MARATHA PEOPLE. By C. A. Kincaid, C.V.O., I.C.S., and Rao Bahadur D. B. Parasnis. Vol. III. 10s. 6d. 8vo. (Humphrey Milford, Oxford University Press.) London 1925. (Presented by the Publishers.)

AN ACCOUNT OF THE BATTLE OF LIAO-YANG. By Major General Sir W. D. Bird. 3s. 6d. (Gale & Polden) 1925. (Presented by the Publishers.)

SCENES IN KAFIRLAND AND INCIDENTS IN THE KAFIR WAR OF 1851–53 FROM SKETCHES. By two Officers of the 43rd Light Infantry. folio. London. n.d. (Presented by Lt.-Col. H. D. Ross, O.B.E.)

AN INDISCREET CHRONICLE FROM THE PACIFIC. By Putnam Weale. 15s. 8vo. London, 1922.

INDIA THROUGH THE AGES. By F. A. Steel. 8vo. London, 1919.

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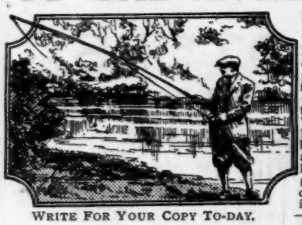

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